September 7, 1942

The OIL WEEKLY

OIL AND GAS ENGINEERING

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Byron Jackson Co.

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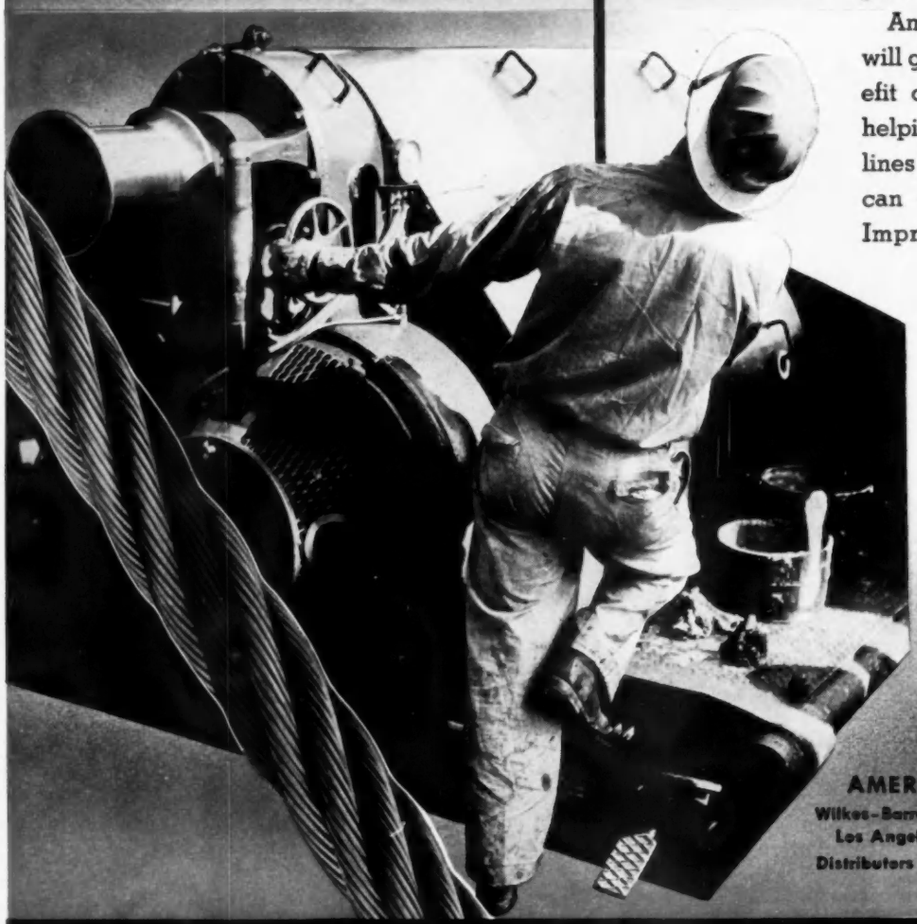

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THE OIL WEEKLY

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The Oil Man's Calendar

SEPT.	
17–18	National Petroleum Association, Wm. Penn Hotel, Pittsburgh.
28–30	American Gas Association, San Francisco.
OCT.	
1– 3	Interstate Oil Compact Commission, Palmer House, Chicago.
2	AIME Regional Meeting, St. Louis.
5– 6	American Gas Association, La Salle Hotel, Chicago.
8–10	Texas Mid-Continent Oil and Gas Association, Dallas, Texas.
12–14	American Society of Mechanical Engineers, Rochester, New York.
14–16	AIME, Petroleum Division, Los Angeles.
19	National Stripper Well Association, Wichita, Kansas.
19–21	Independent Petroleum Association, Wichita, Kansas.
27–29	National Safety Congress and Exposition, Chicago.
29–31	AIME Petroleum Division, Austin, Texas.
30–31	Illinois Mineral Industries Conference, Urbana.
NOV.	
6	California Natural Gasoline Association, Los Angeles.
9–13	American Petroleum Institute, Palmer House, Chicago.
16–18	American Institute of Chemical Engineers, Netherlands Plaza Hotel, Cincinnati.
17–21	National Chemical Exposition, and Industrial Conference, American Chemical Society, Chicago.
DEC.	
2	New Mexico Oil and Gas Association, Artesia Hotel, Artesia.

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CENSORSHIP NOTICE—Censorship rules occasionally make it necessary to tear out or otherwise delete parts of publications destined to subscribers outside the United States. If there be such deletions in copies of THE OIL WEEKLY going abroad, they are at the request of the Office of Censorship. Copies sent abroad face unavoidable delay because of time necessarily consumed in passing the publication through the Office of Censorship.—*The Publisher.*

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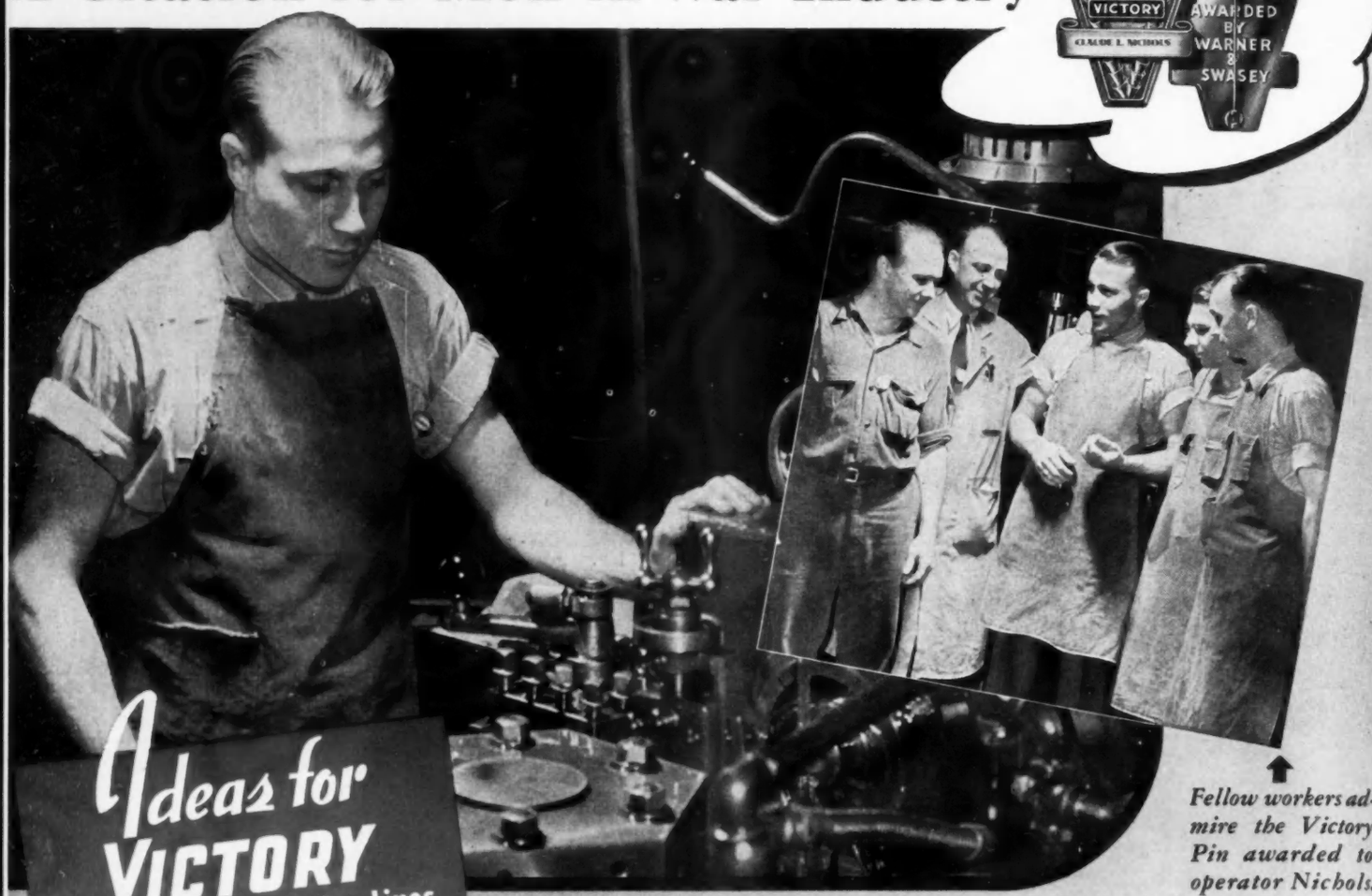
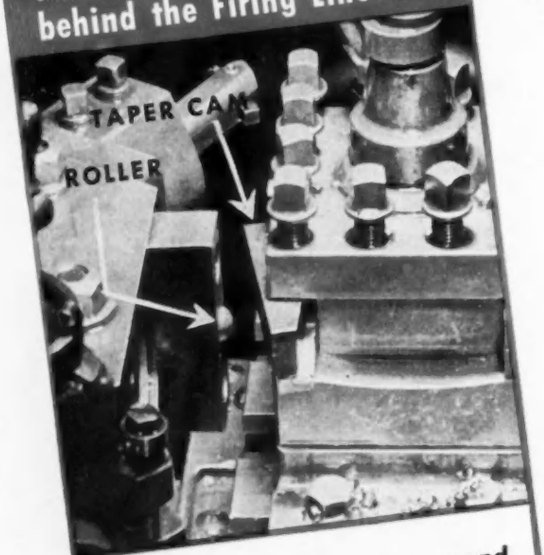
A Citation for Men in War Industry



Fellow workers admire the Victory Pin awarded to operator Nichols.

Ideas for VICTORY

...from the Production Lines behind the Firing Lines...



By locking the hex turret and using a taper cam block to guide the cross slide, the square turret produces an accurate bevel.

He Didn't Wait for a Compound to Produce This Job

Claude L. Nichols, turret lathe operator for WILCOX-RICH CO., Saginaw, avoided holding up an important job by a practical tooling setup to produce the piece which otherwise would have required a turret lathe with compound cross slide.

The photograph at the left shows how he used a taper cam on the cross slide and a roller in a turret station to guide the cutter for an accurate steep taper and smooth finish. The cutter is also ready for facing off and turning O. D.

Thousands of machinists in war work run up against new turning jobs and finishes that challenge their ingenuity. Hundreds of turret lathe operators, anxious to help others, send in their "Ideas for Victory" to be printed in "Blue Chips", a bulletin sent free by Warner & Swasey to thousands of turret lathe operators. These ideas aid old-timers as well as learners. Make sure your men are getting "Blue Chips" at their homes. Write Warner & Swasey, Cleveland, Ohio.

WARNER & SWASEY FOR VICTORY

YOU CAN TURN IT BETTER, FASTER, FOR LESS
...WITH A WARNER & SWASEY

The Changing Panorama

Steel Supply Darkens Drilling Outlook

CURRENT trends, casting the shadow of forthcoming events before them, presage that larger quantities of steel are to be required by the military program, which in turn indicates that further disruption of other work is just around the corner. The critical position of the steel-supply situation is reflected by the fact that more and more war goods must be produced each month to keep up with the armament program, that construction of many new plants has been stopped to give the steel to those already producing, that exclusive use of the two top priority ratings have been given the Army and Navy for six months, that Donald Nelson warns he is going to adopt a "tough" attitude and that warnings are being issued of further disruption of civilian consumer goods. Therefore, despite oil's close association with the war effort, it is likely to fare less favorably so far as getting supplies are concerned.

Already oil companies are finding it more difficult to obtain equipment, so much so that it has become necessary in many instances to request ratings higher than given by P-98, which are not good enough to procure steel. So far as practical purposes are concerned, P-98 appears to have served its time. For several months it has been known that P-98 was to be replaced by a new order, based upon the system of allocating given quantities of steel to each essential industry. That the new petroleum order is to be quite drastic is indicated by the inability of OPC, despite a number of attempts, to draft a measure agreeable to WPB.

Allocation by States

Beyond the fact that it will be based upon a system of allocating the industry a given amount of steel, the probable provisions of the forthcoming order have been guarded carefully. However, with definite quantities allocated to the industry, the problem of dividing that volume between the various operations of the industry and then again to specific work within these divisions becomes an important and difficult task. It would seem logical to expect the order to provide better means of obtaining equipment for preferred operations than for non-preferred or petroleum work of secondary importance. At the moment, installation of facilities for making aviation gasoline, synthetic rubber and other war materials would rank first.

So far as drilling is concerned, the establishment of a preference type of work system might result in the allocation of steel by states, similar to production quotas, with such factors as desirability and probability of increased production in each state being considered along with transportation facilities, etc. After the amount had been divided among the states, it then would be necessary to further divide it between wells, on a preferred basis also. Therefore, the industry may see wells in fields that produce desired types of crude and where big production opportunities are better getting equipment, when those in other areas do without. Likewise, wildcats planned on what is considered first-class prospects would have better chances of obtaining supplies than others. If such a system is adopted, it may be necessary to obtain a drilling certificate from OPC for every new well started.

Consequently, although drilling the past four months has leveled off at a rate of about 375 completions per week, a point well above the low of last March and April, this is no indication that it will continue at this level. In fact, the outlook for this phase of the industry, in view of the steel situation, is discouraging as equipment is becoming more difficult to procure and apparently is to be even harder to obtain in the near future.

New, Giant, Fast Oil Freight Locomotive

A NEW 5400-horsepower mainline diesel freight engine, capable of hauling a freight train at 70 miles an hour, a speed neither required nor maintained normally, was placed in operation August 31 by Baltimore & Ohio Railroad. This is the first such large diesel freight to operate on any eastern railroad, and on its first run pulled oil cars to the east. Consisting of four power cars, this engine has an overall length of 193 feet from its streamlined prow to its rear coupler. Each of the cars contains a 16-cylinder two-cycle engine, rated at 1350 horsepower each.

Producing Ability Matter of Concern

HERETOFORE, the predominantly serious problems of the industry under war conditions have been those revolving around transportation, with the need and ability to move oils to some areas far short of producing and refining capacity. Next in importance have been refining difficulties, involving the making of new products essential to waging war and adjustment of established product output to altered conditions.

Less urgent has been the question of whether or not oil producing ability could be depended upon for a protracted period. A surplus of crude oil has prevailed for so long that continuing plenty has been more or less taken for granted. There is still a widely held opinion that providing any needed quantity of petroleum is simply a matter of further opening up valves. However, time has marched on, and clouds have now gathered in the erstwhile rosy skies of the oil producing master—the United States.

The Appalachian states could have been marketing a million barrels a day in the famined East Coast area, but the best they can do is to produce around 80,000 barrels daily. Production in the region has been at a stripper stage so long, no hope is held for any material boost. At a time when larger production in that state would have been manna from Providence, Illinois has been capable of only diminishing crude output. Michigan, like Illinois, is located where oil is urgently needed, but cannot safely produce much more than 60,000 barrels a day, and has failed recently to produce increased quotas allocated by OPC. Indiana, Kentucky, Tennessee, other producing states in the North Central area, are of minor importance and future prospects appear no better than current ability to produce.

The next step was to call upon Oklahoma and Kansas for more oil to meet the situation. But Oklahoma was not equal to the occasion, and has been drawing on storage. Kansas helped, fortunately, but its surplus is nowhere near the astronomical proportions indicated by "potential" figures used in the state. Consequently, other districts farther down in the Mid-Continent were turned to as a supply source. Today North Texas, East Texas, North Louisiana and Arkansas have no material potential above current production —

unless excessive waste is permitted on the basis of being merry today for tomorrow may never come.

Where, then, is all the oil that can be produced by opening valves? A fairly accurate, if facetious, reply is that it is largely in Shangri-La.

The Louisiana Gulf Coast, with its flowing wells, could produce at higher rates, but apparently not consistently over a protracted period of time. The Texas Gulf Coast in recent years has been consistently capable of producing more than it has been called upon to do, and today represents one of the major potential sources of increased production from established production. The lower as well as the upper portion of the Texas Gulf Coast has potential in excess of current output. West Texas and New Mexico also doubtless could produce substantially more than they are producing. However, these regions can not be depended upon to meet increasing overall demands and at the same time offset growing shortages elsewhere.

Neither is the situation comfortable in the Rocky Mountain and West Coast districts. In the Rocky Mountain states producing ability is not materially in excess of actual current output. California is definitely uncomfortably low in producing ability, and confronted with increasing demands as a result of the Pacific Ocean war. There is speculation that West Texas and New Mexico may be called upon to supplement California output before long.

Considering all these situations, it appears that now is not too soon to be seriously concerned with the nation's oil producing ability. This seems particularly true in view of drilling and discovery trends. Drilling for eight months on a drastically curtailed basis naturally has not helped dispel the clouds, especially with its accompanying enlarged number of dry holes. Neither have wildcat results been of assistance, although a large number of fields are being found, as practically all have been of very small size.

Some day, and the sooner the better, there must be more drilling—especially of wildcats.

Begin Road Tests of Synthetic Recapped Tires

E. R. Fritz, left, Houston station manager for Dowell, Inc., and W. D. Miller, Dowell Houston district manager, inspect a tire recapped with Thiokol preparatory to placing it on a company car for road testing.

ROAD tests began last week on automobile tires recapped with Thiokol synthetic rubber Type N, held by many as the most promising stop-gap solution to America's tire problem because of the abundance of its raw materials and ease of building manufacturing plants. The development of this particular type of rubber goes back to 1940, although other forms have been used for years, but until July 16 only enough Type N had been made for testing and analysis. On that day a pilot plant expected to yield 125 tons monthly started operating.

To retread 12,000,000 tires per year, seen as necessary to keep America's automobiles on the road, would require an estimated 30,000 tons of Thiokol annually, or at a rate of 2500 tons per month. This production, in all probability, will not be reached until the beginning of 1943, although increasing amounts will be manufactured between now and then.

Between 10,000 and 15,000 miles at speeds of not more than 40 miles per hour are expected from the retreads, which look like any other recapped tire but are characterized by a strong chemical smell. The four basic materials required to produce this rubber are caustic soda, chlorine, sulphur and ethylene. The tires now going on road tests were produced at the Midland, Michigan, plant of The Dow Chemical Company for Thiokol Corporation, and will be used on cars of Dowell, Inc., at Wichita, Fort Worth, Tulsa and Houston.

Eastern Fuel Shortage Affects Many

ALTHOUGH only 10 percent of the families in the United States depend upon petroleum products for heat, nearly two thirds of the group reside in that area along the Atlantic Seaboard confronted with such a shortage that rationing is likely to be applied within the next few weeks. This preponderance of oil heating in the region facing restriction explains in part why the emergency is so serious.

More than 35 percent of New England's families burn petroleum fuels for heating, while 15 percent of the families living in the Middle Atlantic States and 9 percent of the South Atlantic families do so. All three of these districts face rationing. These figures are from the Bureau of Census 1940 report, since which time many more oil burners have been installed. Consequently, the percentages may be slightly greater than those given, and probably involve 2,500,000 families. They include families dwelling in homes and apartment houses with central heating systems, and also those using stoves or individual room heaters. The emergency is further aggravated by the fact that many industrial plants and office buildings also use petroleum products, especially heating oil, for heat.

WASHINGTON ROUNDUP

By B. F. LINZ
Washington Correspondent

PIWC Surveys Situation; Makes Important Recommendations

WPB Decides Fuel Oil Rationing Necessary on East Coast

Baruch Rubber Committee Will Report During Week

Senate Tax Committee Retains Depletion Allowance

WPB Halts Drilling in Hugoton Gas Field

THE meeting of the Petroleum Industry War Council was the outstanding feature of a week otherwise quiet as Washington prepared for the last summer holiday of the year.

In long session extending through two days, the council explored the economic developments of the past two months, surveyed the future as best it could in a rapidly-changing picture, looked at war impacts, and took steps initiating the pooling of idle oil field materials, as a means of keeping all operators going with a minimum of strain upon severely limited supplies of new equipment. (Story page 12.)

During the week also the Defense Supplies Corporation made known the details of the agreement under which it will shoulder the excess transportation costs incurred in the effort to maintain supplies to the East Coast district, and a definite decision was reached to impose fuel oil rationing on that area to stretch the inadequate supply of heating oils as far as possible.

At the Capitol, almost deserted as Congressmen and Senators took advantage of the three-day recess which has been the rule for the past month, Eastern Congressmen composing an informal committee to investigate the oil situation threatened to ask the House to grant them official status so that they might compel the appearance of government officials who had refused their invitation to testify.

This week, the country is expected to learn just what the synthetic rubber situation is and what changes, if any, should be made in the administration's 870,000-ton program. Completing a month of study the Baruch committee is expected to submit its report to the President by Labor Day and thereafter quick consideration is expected to be given any suggestions that may be offered by the committee for speeding up the production of rubber.

RATIONING: Plans for the rationing of heating oils to domestic consumers beginning October 15 are expected to be announced within the next two weeks, following a decision by the special WPB subcommittee that systematic distribution would be required to spread equitably the reduced supplies of fuel oil in the Eastern States this winter.

Current indications are that the supply will be close to 25 percent under normal, but the actual effect may be somewhat more severe because of the greatly increased population of many of the Eastern war-production areas.

At the White House September 1, President Roosevelt gave his support to the proposal to ration fuel oil, telling his press conference he expected consumption in the East and other areas would have to be cut 25 percent, while Nelson disclosed that consideration is being given to extension of the rationed area to take in the Midwestern States which have been depleted of tank cars.

WPB officials indicated that rationing will go into effect October 15, the opening of the "serious" heating section in the middle and north eastern states.

Maximum temperature in oil-heated Eastern homes next winter may be no higher than 68°—far from comfortable in the damp climate which extends over a large part of the area.

There is no intention in the OPC of easing restrictions on fuel oil and when the present ban on deliveries to consumers expires September 15, there will be a new order, along lines as yet undetermined, to carry through until rationing plans can be put into effect.

Possibilities that the requisitioning of gasoline cars from the Middle West might necessitate delivery curtailment or rationing in some areas were admitted by Ickes, who refused, however, to speculate on when or where such shortages might occur.

At the same time, asked about the possibility of a cut in the gallon value of coupons in the rationed area if consumption remains above estimates, the coordinator indicated that considerable hope for avoiding such a step is being placed in a further increase in tank car deliveries.

Ickes admitted that it is possible the number of railroad cars in oil service may be reduced by the need for tank cars for vegetable oil, industrial alcohol and molasses, but refused to hazard a guess as to how badly the oil movement would be affected.

Eastern automobilists, however, despite the rationing of gasoline, appear to be more fortunate than motorists in Puerto Rico, where no gasoline whatever is to be permitted holders of A books for the period ending September 14, while possessors of other types of ration books also will be drastically reduced. The A coupons formerly were worth one gallon each.

Gasoline rationing also will be extended to the Virgin Islands on September 16, it was announced by OPA. In both the Virgin Islands and Puerto Rico the oil situation is serious, the cut in Puerto Rico rations being due to a severe supply emergency.

Tire and gasoline shortages are beginning to make serious inroads on state gasoline-tax revenues, it was reported by the Federal Works Agency.

Collections in July in 27 states were 18.5 percent less than in the same month a year ago, while in the rationed area of 17 states and the District of Columbia they dropped 27.08 percent in the fully-rationed states and 26.61 percent in Florida and New York, which were only partially rationed. In 17 states not rationed, revenues dropped 10.73 percent, indicating the effect of rubber conservation.

In the 10 rationed states for which figures were available, the decline in gasoline taxes ranged from 24 percent in New Jersey to 35.5 percent in Ver-

mont; in the non-rationed states the range was from 0.81 percent in Oklahoma to 30.13 percent in Wyoming.

The gasoline-tax receipts generally reflected motor-fuel sales in June, but traffic counts by the Public Roads Administration in 21 states during July indicated a decline of 35.6 percent in the number of vehicles on rural highways, with an average of 40.7 percent in the rationed area and 28.3 percent in other states.

☆

DEPLETION: Stoutly supporting the House, the Senate Finance Committee on September 1 refused to disturb the present depletion allowance provisions of the Revenue Act.

The committee's vote of 14 to 7 came after consideration of a plea for elimination of the allowance by Randolph Paul, general counsel of the Treasury, who described it as "inequitable" and as depriving the Treasury of $203,000,000 in revenue.

Paul, appearing before the committee in executive session, declared the allowance is "greatly in excess of the depletion actually sustained by the taxpayers to which it is allowed," and asserted that in 1941, 78 oil companies deducted an aggregate of $30,600,000 on their own books in computing income and surplus for reports to stockholders.

The committee majority, however, held that special tax treatment is necessary to encourage extensive exploration and development work in new fields. The House Ways and Means Committee originally rejected the Treasury proposal on the same grounds.

☆

DSC COMPENSATION: Regulations under which the Defense Supplies Corporation will compensate the oil industry for wartime increases in the costs of supplying the Eastern States were issued September 1, with instructions to the companies to file applications for compensatory adjustments with the Reconstruction Finance Corporation's New York office.

Compensation, which is to be paid on imports into the rationed area beginning August 1, will apply to crude, aviation gasoline, all grades of motor gasoline, kerosine, distillate fuel oils and residual fuel oils. Range and stove oil and gas oils are included in the definition of compensable products.

Those eligible for compensatory adjustments will include any person "who produces, manufactures, acquires or purchases crude or compensable products in Districts 2 or 3 and imports the same, by substitute method of transportation, for manufacture or sale within District 1" and in addition, "any person who, during the 12 months' period ending June 30, 1941, regularly imported compensable products for his own consumption within District 1 and who imports, by substitute method of transportation, compensable products from Districts 2 or 3 for his own consumption in District 1 shall likewise be eligible to file an application for a petroleum compensatory adjustment."

To ease the way of the companies, it is provided that as soon as an application is submitted and found to come within the provisions of the regulation and to have been correctly and accurately prepared, an advance payment of 75 percent of the claim will be made, the remainder to be paid following audit.

Extra transportation and product costs are to be computed on the basis of the crude or products actually moved by the substitute method of transportation, which is defined roughly as any method other than the tanker and tanker-and-other-transportation methods which normally would be used.

It is provided that the amount of claim in the case of crude or aviation gasoline imported shall be equal to the excess of (1) the cost of transportation from the actual origin to the destination in District 1 by the substitute method of transportation over (2) the cost of transporting similar products by the facilities which would have been used under the normal method of transportation plus, in the case of crude only, the normal weighted average cost of the pipe-line movement (including gathering charges) of crude from the various fields normally supplying the Gulf Coast area to the tanker, the average to be determined and announced by DSC. In the case of other products, the claim shall be equal to the excess of the value of such products at the actual origin plus the cost of transportation from actual origin to District 1 by the substitute method of transportation over the value and cost of movement by normal facilities.

The compensation will apply to persons who did not participate in the transportation pool, but such claimants shall account for all revenues computed in accordance with the terms of the pool plan as though he had become a member August 1, 1942. Amendments of the plan are under consideration which will permit participation of persons not originally eligible.

The regulation set forth the formula for determining the value of compensable products, other than aviation gasoline, providing that if the actual origin is in District 3 the value at normal origin shall be as set forth in a schedule carried in the regulation.

It is also provided that if OPC or ODT direct that in-transit-storage be used in connection with a substitute method of transportation for the purpose of increasing the efficient use of facilities, compensation will be made for the extra costs involved.

☆

DRILLING: Further drilling of gas wells in the Hugoton (Kansas-Oklahoma) gas field was halted by WPB order September 3 on the recommendation of OPC.

The edict suspends the automatic features of Conservation Order M-68 insofar as they may be applied to the field and provides that further drilling may be undertaken only on specific authorization by the Director General for Operations.

Deputy Coordinator Ralph K. Davies explained that more than 20 wells which have been drilled in the Hugoton field are not being produced because they have not been connected to pipe lines. The order, he said, will have the effect of requiring connection of these wells to pipe lines, and make it unnecessary to use critical materials to drill additional wells.

☆

RUBBER: Park bench-hotel room meetings of the Baruch committee appointed by President Roosevelt to investigate the rubber situation are expected to wind up in a report to the White House this week in which may be incorporated recommendations for changes in the Administration synthetic-rubber program.

The committee, consisting of Bernard M. Baruch, head of the War Industries Board in the first world war; Dr. James B. Conant, president of Harvard University, and Dr. Karl T. Compton, president of Massachusetts Institute of Technology, have been engaged in their studies of the rubber problem for more than a month. The committee was set up by the President when the controversy over the synthetic-rubber program threatened to split the Administration and the problem was taken over by the Chief Executive.

Members of the committee and experts working with them have given no indication of the conclusions they have reached, but it is highly unlikely that the report will please some of the officials and members of Congress who have been quarreling over the rubber situation.

Western Senators who sponsored leg-

islation to create a separate authority to foster the production of rubber from farm commodities, and who succeeded in getting their bill passed by both Houses, were responsible for the crisis which led to the appointment of the committee when the President vetoed the bill.

That bill, they warned last week, is not dead, and it was indicated definitely that if the Baruch committee report does not meet their ideas of what is fitting, an effort will be made to override the veto. It was pointed out that under Senate rules, such action could be taken any time before the end of the current session of Congress.

☆

EXPORTS: Exports of crude oil and products under general license will be greatly restricted under orders issued by the office of exports of the Board of Economic Warfare, effective September 5.

Whereas, heretofore, BEW has granted general licenses for such exports to a large number of countries in all parts of the world, such licenses hereafter will apply only to shipments to Canada, Great Britain and Northern Ireland, Newfoundland, Greenland, Iceland and Russia and, provided shipments are made overland, Mexico.

☆

INVESTIGATIONS: Irked over refusal of Secretary of Commerce Jesse H. Jones to permit officials of his Defense Rubber Company to testify regarding the synthetic rubber program, Representative Hartley of New Jersey has asked that official status be given the unofficial House committee under Representative Fitzgerald of Connecticut, which has been investigating the gasoline and rubber situation.

During the week, the committee heard representatives of the Trans-America Pipe Line Company condemn the refusal of OPC, ODT and WPB to permit construction of the proposed government-financed pipe line from the Tinsley field to Savannah or Charleston, which was authorized in the inland-waterway development bill providing for construction of the trans-Florida pipe line.

When it attempted to probe into the synthetic rubber situation, however, the committee was defied by Jones, who refused to permit officials to appear for questioning or to answer a lengthy questionnaire which the committee had submitted. To do either, Jones explained, might result in the disclosure of information of military value.

The Senate Agriculture subcommittee which has been making a study of the alleged failure of the Administration to give proper place in the rubber program to production from farm commodities also renewed its activity during the week, with Chairman Gillette of Iowa charging that there had been discrimination in the allocation of materials for rubber plants which, he declared, should be investigated.

At the same time, and as WPB ordered the immediate stoppage of the manufacture and use of terneplate cans for packing lubricating oils, except for sale to specified government agencies, Gillette revealed that the Macmillan Petroleum Corporation, Los Angeles, had developed a formula for using surplus farm and range products in making all-fibre, plastic-lined containers for packaging motor oils.

Through the Senator, Raymond S. Macmillan, president of the company, offered the use of the formula to all other members of the oil industry.

Macmillan declared the new container is beyond the experimental stage and is being introduced commercially to carry his company's products. It is composed of corn and other grains, flaxseed, tallow, animal tissues, bones and clay, from which three different chemical compounds are produced, all impervious to oil, applied to a fibre container. The Macmillan company alone will save 10,000,000 pounds of metal a year by the substitution, he said.

The WPB order, issued September 2, revoked previous orders which permitted the manufacture and use of terneplate cans for oil until September 30. No restriction is placed on the sale of cans which had been packed with oil prior to issuance of the order.

On September 3, Congressman Hartley introduced a resolution giving the Fitzgerald committee formal status with the power of subpoena to make a thorough investigation of the rubber situation, and in a long outline of the unsuccessful efforts of the group to secure information declared that it has learned enough to indicate that the administration of the gasoline rationing and rubber programs has been "badly bungled."

Hartley spent most of his time in flaying Secretary Jones, who had refused to permit officials of the Rubber Reserve Company to testify before the committee and dismissed the gasoline situation with the comment that "we have had creditable witnesses before our committee who have testified to the fact that the regulations for gasoline rationing were so loosely drawn and have been so laxly administered that there exists today in the Eastern states a black market that is a disgrace.

"For more than a month," he told the House, "the committee has tried to ascertain the exact status of the rubber program for which Congress has appropriated some $650,000,000 and today we know little more, specifically and definitely, about this rubber program than we did more than a month ago when we started out."

☆

SOLVENTS: Aromatic petroleum solvents other than benzol and toluol will be put under complete allocation October 1, under orders issued by WPB.

During September, it was ordered, deliveries of aromatic petroleum solvents must be limited to preference ratings of A-2 or higher.

The allocation control will not apply to users requiring 60 gallons or less a month, but for larger quantities applications must be filed on Form PD-600 by the tenth day of the month preceding that for which allocation is requested, and suppliers must report their proposed deliveries by the fifteenth of each month, using Form PD-601.

☆

SHIPS: Four large tankers were among the 68 new vessels delivered by shipbuilding yards during August, it was announced by the Maritime Commission.

All four were built in East Coast yards, one by the Bethlehem-Fairfield shipyard at Baltimore and the other three by the Sun Shipbuilding and Drydock Company at Chester, Pa.

Deliveries in August were three less than in July, due to shortages of steel and the conversion of some facilities. The commission expects to achieve its goal of three ships a day this month.

☆

INVENTORY CONTROL: The War Production Board on September 4 initiated an exploration of the possibilities of inventory control, but specifically excluded refiners and fuel oil dealers from its plan calling for the filing of voluntary reports by wholesale and retail merchandise distributors. The plan is to be tried out for four months, and if the data accumulated indicates necessity, orders will be issued formally bringing inventories under control, a matter which has been the subject of considerable discussion in administration circles concerned over possibilities of inflation.

PIWC Sees Need For Additional Major Operating Changes

Council surveys rapidly changing picture . . . Foresees difficult winter for East Coast with little relief before first of year . . . Recommends control of use of all products along Atlantic . . . Urges marked additional adjustments in refinery yields to increase fuel output and curtail gasoline production, although income would drop $35,000 more daily . . . Sees need for taking further action to increase utilization of transportation facilities . . . Predicts larger crude production demand with District 3 necessarily supplying gain . . . Suggests pooling of idle field equipment to keep operators going . . . Discusses concentration of oil authority in one hand, and need for finding additional reserves.

REPORTS showing that refineries in Districts 1, 2 and 3 were facing income losses of as high as $35,000 a day as a result of changes in yields to produce products needed for the war, that the East Coast situation has not improved greatly and faced a difficult winter, an assertion that a definite program of government participation in the discovery and development of new fields was needed, and a controversy over proposals for the pooling of excess materials marked the September meeting of the Petroleum Industry War Council.

The heavy losses faced by the refinery were brought out in a report of the Committee on Petroleum Economics, which developed also that consumption of gasoline in the rationed area has not yet been brought down to the 435,000 barrels daily aimed at and warned that under the best of circumstances the East will go into the winter season with but a slight margin of safety of supply and inventory over demand in sight.

An important report on the impact of the war on the industry was submitted to the meeting, but after considerable discussion was returned to the committee in charge with instruction to revise and resubmit it next month. The report was not made public, but is understood to have dealt in detail with the problem of excess transportation costs which now has been cleared up by the agreement of the Defense Supplies Corporation to assume that burden.

Equipment Distribution

A sharp difference of opinion as to how surplus materials in the industry should be made available to those needing them arose at the last of the two-day sessions when charges were made that in some instances there has been an attempt to hoard such materials and an insistence that any plan for pooling should take that charge into consideration. There was considerable opposition to anything drastic, and the council finally adopted a resolution expressing the belief that "it is essential that all necessary materials and supplies required for the exploration and production of petroleum be made available on an equitable basis to all production units of the petroleum industry wherever possible," and asking the Coordinator to set up in each district a committee on materials and supplies which would be impowered to take the steps necessary to bring about through industry cooperation, equitable distribution of such materials as may now exist. The committee also would be directed to prepare and submit to OPC estimates of future materials requirements, so that OPC and WPB may properly adjust the flow of materials from manufacturing sources.

Through this resolution the council avoided definite action on any of the several plans proposed for achievement pooling, all of which were subject to opposition, and left the way open for each district to develop the plan which the various interests felt best fitted to conditions in the area.

East Coast Deliveries

Strenuous efforts of the industry have resulted in increasing East Coast stocks of crude oil and products by 6,600,000 barrels during the past eight weeks, but have failed by 25 percent to achieve the increase needed to provide the required minimum accumulation of distillate and residual-fuel oil stocks, PIWC was told in a report of its committee on petroleum economics.

With the favorable summer weather fast drawing toward a close, the committee saw little chance of providing any broad margin of safety in stocks, and called for the most effective utilization of transportation and the utmost flexibility in providing a maximum yield of fuel oils during the next few months to boost supplies as much as possible.

At the same time, "in view of the small margin of safety and the limited flexibility offered," the committee called for a re-examination of the whole East Coast program "from a practical operating standpoint" and declared that "if the margin of safety and operating flexibility are inadequate, or if the program outlined cannot be made effective promptly, in view of uncertainty as to compensation for the large operating losses it would involve, additional steps would have to be taken."

Because of the drain upon the facilities of other areas to satisfy District 1 needs, the committee considered supply and demand not only in that district but in Districts 2 and 3, and the extent to which the East might be supplied from District 2.

Its estimates, assuming tanker deliveries of 150,000 barrels a day, placed August Eastern deliveries at 1,272,000 barrels, plus 83,000 barrels of crude oil and natural gasoline produced in the district, a total supply of 1,355,000 barrels daily, or 236,000 barrels more than demand.

This month, however, it is figured tanker deliveries will drop to 125,000 barrels, but tank-car deliveries will increase from 850,000 to 970,000 barrels a day, with crude production also up 1000 barrels and deliveries by other means increased, to give a total supply of 1,472,000 barrels, or 284,000 more than the demand scheduled to be supplied.

Beginning with October, tanker deliveries will drop to 100,000 barrels a day, tank-car deliveries will begin to feel the effects of tougher railroad operating conditions and Great Lakes tonnage will decline, although District 1 production of crude oil will reach a peak of 80,000 barrels, and natural gasoline will increase to 7000 barrels, and further to 9000 barrels by November. As a result, deliveries are expected

to drop to 1,291,000 barrels a day next month, 1,285,000 barrels in November and 1,250,000 barrels in December, while the change in inventories will drop to 112,000 barrels more than scheduled demand in October, to 37,000 barrels less than demand in November and 204,000 barrels less than demand in December.

For the first quarter of next year, however, the picture is brighter, for tank-car deliveries are estimated to rise to 932,000 barrels a day, pipe-line deliveries will reach 95,000 barrels of crude and 91,000 of products, and barge movement on the Mississippi and Ohio will run to 88,000 barrels and to Florida 81,000 barrels, giving total receipts, with no estimate whatever for tanker deliveries, of 1,287,000 barrels. But scheduled demand and deliveries to other districts—chiefly lubricating oils—will be 139,000 barrels more than receipts.

On the whole, the committee said, this program will provide sufficient supplies to the East Coast to cover essential demands with a small surplus of about 4 percent but, it was pointed out, "this leeway constitutes a negligible margin of safety considering present minimum stocks and the size of the operations involved, and even if realized would only take care of one third of the intermediate demand."

Realization of this program, the council was told, will necessitate prompt action on the following:

"(a) Maximum utilization of all available transportation facilities in the most

Industry's War Council Performs Important Duties

NUMEROUS problems of the industry, most of them either directly or indirectly arising from the war, have been studied and constructively dealt with by the Petroleum Industry War Council.

PIWC operates officially under authority of the Office of Petroleum Coordinator for War, having been established by Coordinator Harold L. Ickes as a body representative of the industry, to cooperate with OPC in unifying and mobilizing the industry for meeting problems imposed by the war. PIWC, accordingly, is a cross-section of the industry, consisting of 72 members, representative of large and small operators and all sections of the country.

An important part of the work of PIWC is supervision of standing committees. Among the standing committees are those that represent the main divisions of the industry: production, refining, transportation, marketing, and natural gas - natural gasoline. Other standing committees are those on petroleum economics, protection of petroleum industry facilities, synthetic rubber, pipe-line management, war impact, cost and price adjustment, etc.

Besides the main committees are various subcommittees, which need not include council members. The subcommittees include: a technical subcommittee of the synthetic-rubber committee; an engineering subcommittee of the pipe-line management committee; a working subcommittee on petroleum economics; subcommittees of the marketing committee on lubrication and containers, equipment, and product conservation; and regional subcommittees on protection of petroleum industry facilities for the several major regions of the country.

The various committees of PIWC report regularly to Washington headquarters in the Commonwealth Building. The committee reports received by PIWC are the basis for council reports and recommendations to the petroleum coordinator, who in turn passes suggestions on to other government agencies concerned with the wartime problems of the industry.

Decisions of OPC and the War Production Board, particularly in connection with the shortage of petroleum on the East Coast, have been based on facts set forth in reports of PIWC's committee on petroleum economics.

Transportation and pipe-line-management committees have worked importantly in solution of the problem of inadequate transportation, having developed plans for relocating and reversing pipe lines and for other measures of relief.

The committee on marketing and its subcommittee on product conservation have helped devise common advertising themes.

The committee on cost and price adjustment developed evidence of cost increases caused by the war, and has prepared pertinent information for consideration of price control and other government authorities concerned with regulations affecting the industry.

An outstanding example of the varying nature of PIWC's work was the national rubber-scrap-collection drive, of great importance to the country as well as the industry, which was planned and directed by PIWC with noteworthy success. The industry was organized almost overnight for the campaign, speed that was essential and possible only because of the PIWC organization and the industry's numerous and scattered filling stations. Chairman William R. Boyd, Jr., directed the major part of the drive through district, state and regional chairmen and committees of oil men.

Chairman of the Petroleum Industry War Council is William R. Boyd, Jr., at right, who also is president of the American Petroleum Institute.

Assistants to the council's chairman are, from left to right: Russell B. Brown, Joe L. Dwyer, and Fayette B. Dow. At the extreme right appears the council's secretary-treasurer, Allan B. Hand.

effective manner. In particular, to realize the estimates of tank-car deliveries, upon which the success of the program depends, will mean a high degree of industry cooperation in the use of terminal and loading facilities to make possible maximum movement in train-load lots. To take care of the increase forecast in barge deliveries on the Ohio River, adequate additional barge unloading, storage and tank-car loading facilities must be provided.

"(b) A marked readjustment in refinery yields to increase distillate and residual fuel oil production at the expense of gasoline. This will mean the maximum utilization of refining flexibility. To avoid hardship on refiners which would jeopardize the program, and to expedite carrying out of the required changes, prompt action on the necessary compensation is essential.

"(c) Necessary cooperation by state regulatory bodies and the Interstate Compact Commission to make possible the crude production schedules indicated for the three districts.

"(d) The adjustment of refinery operations and transportation so that stocks of crude and products will conform to the schedules indicated, which take into account the variation in seasonal requirements and works down to seasonally adjusted minimum stocks.

"(e) The control of the use of all petroleum products in District 1 so as not to exceed the available supplies of each. It is particularly important that gasoline consumption be held down to the amount estimated to be available under the program. Failure to do this will mean the use, for gasoline, of transportation facilities that should be used to build up needed stocks of distillate and residual fuel oils in anticipation of increased winter demands.

"(f) Coordination between buyer and seller activities so that supplies offered in Districts 2 and 3 may promptly be moved to District 1 in such quantities and from such location as to utilize most effectively all available transportation.

"Too much stress cannot be placed upon the fact that the scheduled program offers only a very small margin of safety," the report concluded. "All areas and functions of the industry must cooperate to a high degree in order that the operating schedules indicated be put into effect promptly."

In its review of conditions, the report pointed out that in Districts 2 and 3 no artificial restrictions on consumption are assumed other than the effect of voluntary curtailment brought about by the scarcity of rubber and other factors. Gasoline consumption in District 2 is estimated as decreasing by December to 25 percent under the same month last year, but in District 3 overall gasoline demand is expected to increase because of the anticipated increase in aviation gasoline requirements.

For the two districts together the local demand for kerosine and distillate oil for the forecast period is seen as changing only nominally from a year ago, while in the case of residual fuel oil an increase of 19 percent over 1941 is foreseen.

Production Predictions

The committee estimated that crude production in District 1 will rise from an actual of 75,000 barrels daily in July to 77,000 barrels for August and September, and to 80,000 barrels for the final quarter this year and the first quarter of 1943. In District 2, the actual of 1,039,000 barrels in July is estimated to increase to 1,065,000 barrels in August and thereafter decrease to 1,055,000 barrels in September, 1,038,000 barrels in the final quarter and 1,005,000 barrels in the first quarter of next year, while in District 3 a steady increase is foreseen, from the July actual of 1,662,000 barrels to 1,772,000 barrels in August, 1,805,000 barrels in September, 1,870,000 in the last quarter and 1,890,000 in the first quarter of 1943.

"In the case of Districts 1 and 2," the report explained, "the production estimates correspond to the maximum that can be expected to be produced under anticipated conditions and regulations, as these districts provide nearer sources of supply to District 1 than does District 3. The District 3 production estimates are of necessity derived from the refinery runs required to supply local demand plus requirements for shipment out of the districts, when allowing for estimated stock changes. The increased production in District 3 called for under the program is required even though the present excessive stocks of crude oil in District 3 are estimated to be substantially reduced. The forecast reduction amounts to about 65,000 barrels per day over the seven-month period beginning September, 1942."

Need More Yield Adjustments

Appended to the report was a table of refinery runs and yields forecast for the three districts, showing, it was pointed out, the marked adjustments that will have to be made to increase distillate and residual fuel oil supplies at the expense of gasoline.

"Additional residual fuel oil supplies are particularly needed because of increased war and industrial activity, while the consumption of gasoline is anticipated to continue to drop off as the result of rubber restrictions and of rationing in District 1," it was explained. "In the schedules of indicated yields, consideration has been given to the

PIWC Refinery Yield Program

(Figures are percent yield of crude runs to stills)

	Actual 1941	SUPPLY PROGRAM FOR 1942 August	1942 September	1942 4th Quarter	1st Quarter 1943
District 1:					
Gasoline	39.3	37.6	35.5	35.0	35.0
Kerosene	4.7	4.5	4.0	3.8	3.8
Distillate Fuel	17.6	9.3	13.3	14.3	14.3
Residual Fuel	21.2	26.6	27.4	27.7	28.4
Lubricants	5.8	8.2	7.2	6.9	6.9
Asphalt and Road Oil	5.0	2.7	2.2	1.9	1.1
Other and Loss	6.4	11.1	10.4	10.4	10.5
Total	100.0	100.0	100.0	100.0	100.0
District 2:					
Gasoline	52.2	44.0	43.0	40.4	40.0
Kerosene	5.0	7.0	7.0	7.0	7.0
Distillate Fuel	10.3	13.7	14.7	17.8	17.0
Residual Fuel	18.5	22.0	22.0	22.0	23.0
Lubricants	2.2	2.4	2.4	2.4	2.4
Asphalt and Road Oil	3.6	4.5	4.0	3.1	2.6
Other and Loss	8.2	6.4	6.9	7.3	8.0
Total	100.0	100.0	100.0	100.0	100.0
District 3:					
Gasoline	44.4	34.8	33.8	33.8	33.8
Kerosene	7.4	6.0	5.4	5.4	5.4
Distillate Fuel	14.2	17.0	17.4	17.4	17.4
Residual Fuel	23.2	29.4	29.4	29.4	29.4
Lubricants	2.5	2.5	2.4	2.4	2.4
Asphalt and Road Oil	1.5	1.7	1.6	0.8	0.6
Other and Loss	6.8	9.6	10.0	10.8	11.0
Total	100.0	100.0	100.0	100.0	100.0
Refinery Crude Runs—(Thousands of Barrels per Day)					
District 1	667	550	625	650	650
District 2	1117	1170	1170	1150	1150
District 3	1359	1205	1250	1250	1250
Total	3143	2925	3045	3050	3050

necessity of maintaining certain amounts of motor gasoline production in plants manufacturing essential war products. To accomplish these yield changes will utilize existing refinery flexibility to a maximum. Prompt action in this direction is required, for the longer the changes are delayed, the more drastic they will have to be.

"On the basis of existing product prices, the realization of these yields will obviously mean a large reduction in refinery income per barrel of crude run. The increase in the yields of kerosine, and distillate and residual fuel oil and the reduction in gasoline yields called for in the program are set forth for the three districts, in comparison with present operations and those of previous periods, in an accompanying table.

"These adjustments mean in effect that, to accomplish the average yields forecast, about 270,000 barrels daily of gasoline must in effect be degraded to lower valued products, principally residual fuel oil, during the forecast period, as compared with average operations for the year 1941. On the basis of differentials in current ceiling prices in the three districts, this means a reduction in refinery income of approximately $35,000 per day as compared with the income which the refiners would obtain on the hypothesis that they ran the forecast barrels of crude, obtained the average 1941 yields, and sold the products at current ceiling prices. This reduction in gross income would be offset only in small part by reduction in cash operating costs.

"To accomplish the objective will doubtless bring severe hardship to refiners unless the directives for the required yield changes are accompanied by prompt action to compensate for them."

War Impact Studied

Another high spot of the Council meeting was the discussion of a voluminous report from a committee and subcommittees on the impact of the war on the petroleum industry, which wound up with the report being turned back for revision and resubmission at the October meeting.

Featuring the impact report was a review of the cost situation arising from changes in refinery procedures, transportation, etc., which it was declared called for government assumption of increased expenses incurred by the industry in conforming to war-

PIWC's Committee on War Impact

THE Committee on War Impact, whose report was one of the highlights of the Petroleum Industry War Council meeting last week, was created "to make a thorough study of the numerous costs, operating complications, and dislocations, which have been thrust upon the petroleum industry by the war's impact."

Consisting of 12 members, headed by John D. Gill, of Philadelphia, a director of Atlantic Refining Company, the committee organized itself July 20 and promptly began work on its report. The committee was set up around PIWC's standing committee of six on cost and price adjustments as a nucleus. That group, also headed by Gill, includes the chairman of the general committee of PIWC for each of the five OPC districts. In addition, the special committee on impact of war includes six men representative of the various interests within the industry.

Photographs of all members of the impact committee, with one exception, appear herewith. The missing member is A. Jacobsen, president of Amerada Petroleum Corporation, New York.

Above, from left to right: John A. Brown, president, Socony-Vacuum Oil Company, New York, and OPC chairman for District 1; Frank Phillips, chairman of board of Phillips Petroleum Company, Bartlesville, Okla., and OPC chairman for District 2; John D. Gill, economist and director of The Atlantic Refining Company, Philadelphia, chairman of PIWC war impact committee; Charles F. Roeser, Roeser & Pendleton, Fort Worth, and chairman of OPC District 3; and W. H. Ferguson, executive vice president of Continental Oil Company, Denver, and chairman of OPC District 4.

Above, from left to right: William F. Humphrey, president, Tide Water Associated Oil Company, San Francisco, and chairman of OPC District 5; Frank Buttram, independent oil producer and president of IndependentPetroleum Association of America, Oklahoma City; B. I. Graves, vice president of Tide Water Associated Oil Company, New York; Dan Hovey, vice president of Republic Oil Refining Company, Houston, and president of Gulf Coast Refiners' Association; W. Alton Jones, president of Cities Service Oil Company, New York; and B. L. Majewski, vice president of Deep Rock Oil Corporation, Chicago.

agency directives, and the equally imperative need for a definite program of discovery and development to make up the accelerating decrease in reserves.

In a statement to the council regarding the report, Frank Buttram, president of Independent Petroleum Association and a member of the reporting committee and chairman of its subcommittee on production, declared that "the discussions in the general report on marketing and refining prove conclusively that government aid must be given to such matters as increased transportation costs and increased costs of adjustments of refinery yields because of government directives as a result of the war impact."

Referring to the Bureau of Mines report that initial production of new wells in June was only 35 percent of that of June, 1941, and the ratio of dry holes to total completions had risen from 23 to 33 percent in a year, pointed out that this situation came at a time when the United States may soon be the only large-scale source of oil for all the United Nations.

The United Nations already have lost the Dutch East Indies and Burma in the southwest Pacific area and the Baikop fields in the Caucasus, the Germans are definitely threatening the oil fields of Iran and Iraq and are approaching the Grozny oil fields, in a short time may overrun the Baku fields, and German submarines have interrupted our crude importations from Venezuela, he pointed out.

"Since, according to the Bureau of Mines report, our drilling activities have declined 50 percent in the last six months and since our yield of new production per well in June, 1942, has declined 65 percent as against the production in June, 1941, and since all of the producing states are producing at a maximum from a conservation standpoint, with the probable exception of New Mexico, Texas and Louisiana, and since without additional discoveries the production in Illinois will decline about 100,000 barrels per day during 1942, it is clearly evident that we are not only drawing rapidly upon our known reserves but unless something definite is done soon to develop new oil reserves the petroleum industry will shortly be unable to meet the demands made upon it," he said.

"Lastly, when we finally realize that out of consistent operations over a period of years it requires five years' time on the average from the time of starting surface explorations until the field is a substantial producing unit, we must lose our self-complacency about our ability to meet all demands that may be made upon us. * * *

"If we are to perform our proper function, if we are not to be derelict in our duty to the petroleum industry, to the petroleum coordinator, to the war effort and to our government, we must definitely notify all interested parties that additional oil reserves must be discovered in the near future and immediate steps must be taken to do this."

Buttram admitted it may be "unpleasant" to government authorities, but they must "face the facts" and realize that "we can not possibly place a new stock of oil reserves on the counter at the present prices for crude oil.

"No amount of figuring with pencils will be able to determine how much will be required to provide these essential reserves but whatever that amount is it must be authorized by proper government officials before it is too late," he declared.

"Some of the members of this council and even some governmental authorities have treated the production branch of the petroleum industry as a step-child, but in reality it is the foundation and root of the petroleum family.

"If the producing branch of the petroleum industry fails to develop the new reserves needed, the petroleum industry as a whole fails. We must not get there with too little, too late."

Synthetic Rubber Report

The council also received a report from its synthetic-rubber committee on progress in the conversion of refinery facilities to the production of "quick" butadiene for rubber, isoprene, ethylbenzene, isobutylene, benzol, toluene and other aromatics for 100-octane aviation fuels and explosives.

Details of the status of the plan were not released, but it was indicated by Committee Chairman W. S. S. Rodgers that butadiene production, when and if specific authorizations are obtained from OPC, WPB and Rubber Reserve Company, probably can exceed 200,000 tons annually, and in addition even larger quantities of other materials vitally needed for the war can be obtained. The program, he said, requires relatively little new scarce material, but the plan is so complicated that its exact application to specific refineries has required extensive charting.

The committee also reported progress in the development of a small-scale flexon program, but disclosed that a larger program cannot now be planned because of uncertainties in the supply of isobutylene raw material needed, and also in the demand for isobutylene for other essential war products. However, it was aid, a program has been recommended for manufacture of flexon using a small amount of new materials and not interfering with the production of other war products which will give complete, although small-scale, experience that will be valuable in later planning.

Resolutions adopted at the meeting included one requesting OPC to secure legal clearance on a directive holding production of gasoline to 80 percent of last year's output, and another asking the Coordinator to request OPA to reconsider three petitions for price adjustments which it has rejected on the ground that the amounts involved were too small. One of these applications was from the Pacific Northwest and the other two from Mid-Western areas. The amount involved in at least one instance was slightly in excess of $1,000,000 which OPA said was too small, when divided among six or seven companies, to warrant a puncture in the ceiling prices for products.

Also in attendance at one of the sessions were J. R. Sloane of the Office of Defense Transportation, and J. A. McNamara and Robert Capps of the Chemical Division of the War Production Board, who requested the industry to make available at certain points throughout the country, idle oil tankage which could be made available for the storage of alcohol and vegetable oils.

Concentration of Authority

There was a considerable discussion of what has recently become a major subject—the concentration of all authority over oil in the hands of one agency—with many important members of the council emphatic in their declarations that control should be taken from WPB and OPA and placed in the hands of OPC. A number of reasons were advanced for such action, but a major cause of complaint was the alleged lack of coordination of the various federal agencies having an interest in petroleum.

The move to concentrate authority is gaining in Congress, where several measures have been introduced to that end, and Congressmen have taken the matter to the White House, suggesting to President Roosevelt that he bring about the centralization by executive order.

At his press conference, September 3, Coordinator Ickes, asked for his views, pointed out that in the handling of power problems he had always fought for "one-man administration rather than a three-man debating society."

"I never have been very much for shotgun administration," the Coordinator said. "If there's a job to be done, it should be done by one man—I am not saying who it should be, of course."

War Making Heavy Inroads On California Fuel Surplus

Santa Maria Valley fields could readily offset stock losses, but transportation is a problem

HEAVY inroads are being made on surplus supplies of fuel oil on the Pacific Coast in order to meet the increasing demands upon the area to supply the Pacific fighting fronts.

California is now the only supply source for fuel open to the United Nations in the Pacific and demands upon the territory this year have averaged 1,250,000 barrels a month more than the industry has been able to produce, bringing a 10,000,000-barrel reduction in inventories of Pacific Coast companies in eight months.

Production of heavy crude high in fuel-oil yield has been a main-stay of the California industry since its inception, but the state today is nearly at the point where it can see the end of its heavy-oil reserves. This is because, with the exception of one district, its fuel-oil resources have been fully exploited and available reserves carefully indexed. These reserves are large, but not inexhaustible.

The single unknown equation in the state's heavy-oil picture is the Santa Maria district in Santa Barbara County. Developed heavy-oil reserves in this district represent a minimum of 180,000,000 barrels, some authorities placing the total at close to 300,000,000 barrels, while production men best qualified to appraise the area are of the opinion the district's known pools will eventually be extended to embrace a reserve of from five to six hundred million barrels. This estimate does not contemplate any new discoveries but only extension of proven pools.

On January 1 this year developed reserves of heavy oil in California were estimated by an OPC survey committee at 897,023,000 barrels, or 27.1 percent of the state's total oil reserve of 3,315,962,000 barrels. Included in heavy oil reserve data were all fields yielding crude of 24 gravity and below.

Exclusive of the Santa Maria area, the only important sources of heavy oil not fully developed included Wilmington in Los Angeles County and Mount Poso-Round Mountain in Kern County. This is also exclusive of the Elk Hills Naval Reserve, estimated to represent a 600,000,000-barrel reserve of both heavy- and light-gravity oil, which for the most part is undeveloped.

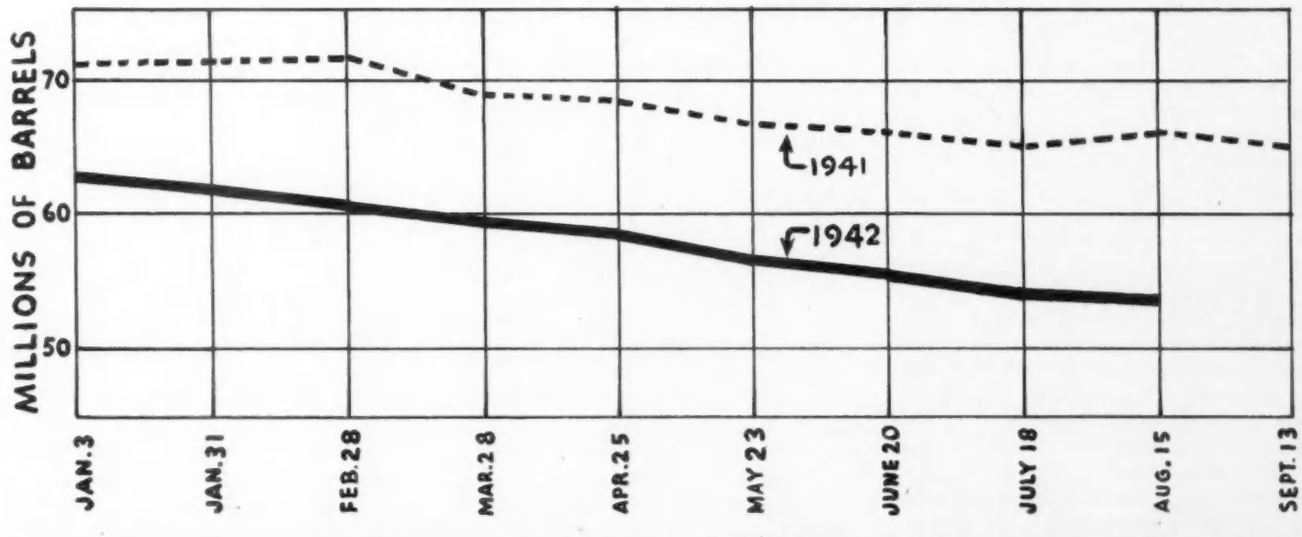
The OPC survey indicated that 600 wells would complete development of heavy-oil resources in the Wilmington field.

Santa Maria Area

Major heavy-oil production in the Santa Maria district currently is coming from the Santa Maria Valley field which is producing about 31,800 barrels of crude daily. Five other pools in the area, Casmalia, East Cat Canyon, West Cat Canyon, Lompoc and Orcutt are yielding about 10,200 barrels daily; while Gato Ridge, the seventh pool in the district, is producing about 4100 barrels daily. This makes a total of 45,100 barrels daily for the area, and represents the maximum volume of output that can be handled with available transportation.

Situated 180 miles from the Los Angeles refining center, the district is

Trend of Heavy-Fuel-Oil Stocks in California



Development Data on Santa Maria District, California

FIELD	Proven Reserve Barrels	Number Wells	Average Formation Thickness	Depth Range	Gravity Range	Current Production Bbls. per Day
Casmalia		12	400	635—2800	8—22	
East Cat Canyon			300	3099—3860	12—16	
West Cat Canyon	60,000,000	21	200—400	2938—6465	12—16	10,200
Lompoc		13	300—700	1900—3300	18—22	
Orcutt		194	200—450	1005—4280	18—28	
Gato Ridge	20,000,000	16	700—900	2475—3270	15—17	4,100
Santa Maria Valley	100,000,000	234	100—1000	2890—4950	14—17	31,800
Total	180,000,000	490	.....	.....	.....	45,100

served by two marine terminals, one of which is without a pipe line. Four small refining units are operating in the district and several other small plants are shut down.

Both pipe lines out of the district are operated by Union Oil Company of California, one being an 8-inch high-pressure line from Orcutt to Avilla-Port San Luis, with pumping stations at Orcutt and Santa Maria Valley fields. This line has a capacity of 25,000 barrels daily. A 6-inch gas line from Orcutt to Port San Luis recently was converted to oil and is rated at from 5000 to 8000 barrels daily capacity, depending upon products moved through it. The conversion was a simple engineering operation, requiring only minor equipment changes and testing of the line for leaks.

Production from the Gato Ridge field is moved through Port Petrol and is moved by truck to the terminal. Estimated capacity of this facility is approximately 6000 barrels daily.

Maximum regular facility for moving oil from the area therefore is 39,000 barrels daily, or 6100 barrels daily less than current production. This excess is handled by the four operating refineries in the district or run to storage or consumed for road oil.

Until the transportation bottleneck can be broken there is little likelihood any very extensive drilling operations will be undertaken in the district since a surplus of potential output is already developed. Few wells in Santa Maria Valley field, for example, have produced at an average rate of more than 160 barrels daily for any length of time, whereas the potential capacities of many run to 5000 and 6000 barrels daily. Due to the low rate of output, bottom-hole pressure data on the fields reflects very little, if any, decline in subsurface pressures.

Additionally, early development of Santa Maria Valley was on a 10-acre spacing basis, and all drilling since priorities were established has been held to 40-acre spacing. However, due to the heavy character of the oil, drainage limits of individual wells is estimated at less than 5 acres.

While the district includes old pools that have been fully developed, the newer areas are still largely unknowns as far as outer limits of production are concerned and herein is the reason this district represents this state's greatest new reserve potential.

Production limits at Santa Maria Valley have been defined only along the pool's northern flank, possibilities in other directions being subject to future drilling.

Cat Canyon was brought on production in 1906, but a new deep zone has been put on production, the limits of which are not defined in any direction, except possibly to the northwest.

Lompoc, discovered in 1903, is still undefined and offers important development possibilities.

Gato Ridge, brought into production in 1931, now has 16 producing wells which, it is believed, have indicated the reserve available, but much drilling would be necessary to effectively drain the structure.

Casmalia, discovered in 1904, is relatively unimportant as a heavy-oil reserve and has only small production. Orcutt is also an old area, discovered in 1903, and is well defined.

Fields in the area to watch from the standpoint of new development work and extensions would include Santa Maria Valley, Cat Canyon and Lompoc. Gato Ridge is also important from the standpoint that it has extensive proven locations which can be drilled when and if the transportation problem eases.

Engineers point out that sustained production possibilities of the new areas are now unknowns as there has been insufficient experience at high rates of flow to determine decline rates with wells open. In the older fields in the district, however, very slow declines have been the rule after wells once reached settled producing status.

While deeper sands are a possibility in other areas, the Santa Maria Valley field is bottomed in basement schist and future expansion of this pool's reserve will depend upon outpost locations rather than deep drilling. The structure is an overlap of Miocene on a schist land mass or shoreline deposit.

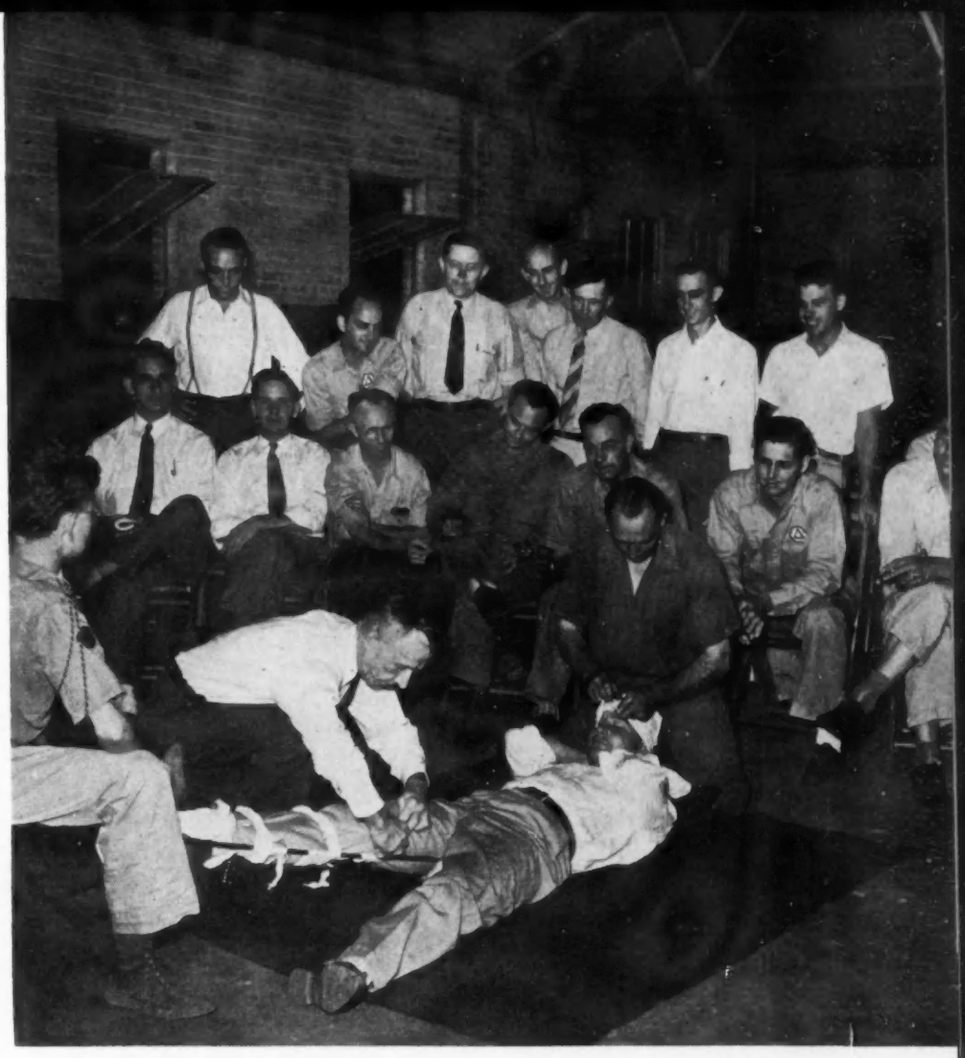
Wells can be drilled and placed on production in the Santa Maria Valley field in less than 30 days. At Cat Canyon the newly developed sands are a little deeper, running to 5700 and 5800 feet.

Potential capacity of the new sands in this area may open a heated controversy among California operators on the procedure to be followed under rules of scarcity. The question that is posing itself is whether critical supplies of steel should be allocated to areas where only small settled production is a prospect, but where transportation does not offer a serious problem, or whether the steel should be allocated to flush heavy-oil areas such as the Santa Maria district offers, but where transportation is a problem.

The point is made that in the older San Joaquin Valley areas the allocation of 30 tons of steel may result in a net addition to the state's potential production of 10 barrels daily, whereas, the allocation of 100 tons of steel to the flush Santa Maria district would bring completions adding from 500 to 600 barrels daily per well to potential capacity. So far, OPC has no authority to settle this dispute should it become serious, while at the same time the War Production Board has been adverse to taking a hand in the matter.

Inasmuch as the district now has potential production in excess of transportation facilities, it is contended priorities should be forthcoming on sufficient drilling equipment to permit the companies in the area to thoroughly explore the outer limits of known pools so that when the time comes that it is necessary to bolster the flow of fuel the industry and the country will know what it has to work with without guesswork. Needed supplies could then be obtained in short order if the fields were proven to their outer limits of production.

Exploration work is being conducted in the district at seven points, but the operators say a great deal more work would be moving forward if priorities were available. Four of these projects are in the Cat Canyon area, two at Lompoc and one at Orcutt. In proven territory 2 projects are planned at Cat Canyon, 3 at Gato Ridge, 13 at Santa Maria Valley. Of this number, however, 12 have not spudded, due to material problems.



—Photo by J. E. Hampson

Efficiency—

Get It With Safety

By J. B. HARRIS
Safety Director, Arkansas Natural Gas Corporation

NOT so many years ago when the subject of safety was mentioned around the operating men of the petroleum industry the response was either a derisive sneer, or a careful explanation that "some accidents are bound to happen" and "that's why you carry your insurance." The last few years, even the past few months since Pearl Harbor, have made a drastic change in this conception of safety. Now, instead of being the pet theory of some official of the company or instead of being considered a hindrance to operations, safety is now recognized as a prime factor in improving efficiency throughout the petroleum industry.

Before we go any further, let's stop and look at the record of the petroleum industry safety-wise for the past few years. Let's remember to start with that organized safety work is new in this country, that safety engineering as a profession has come into being in the past quarter century. Until a few years ago the accident rate was extremely high, due to the hazardous conditions under which men were forced to work in the oil industry. As the workmen's-compensation-insurance rates began to mount it became increasingly evident that steps must be taken to improve this condition. Thus, safety was born in the petroleum industry. Curiously enough, when methods were applied to eliminate accidental injuries and when accidents began to decrease, not only the insurance rates began to improve but other costs began to decline proportionately. To be specific it is now an accepted fact that the compensation and medical costs are only one fifth of the total costs incurred by accidental injuries of workers.

But let's turn to the records compiled by the American Petroleum Institute. In 1929 the institute reported 151 fatal accidental injuries out of a total of 226,280 workers, in 1941 although the workers reported had increased to 333,-122 the number of fatalities dropped to 112. During the same period the number of workers to each disabling injury was 15 for 1929 compared to 41 for 1941. In other words, 110 petroleum workers are alive today that would have been killed by accident last year had the same fatal injury rate continued. Moreover, 12,812 disabling injuries were prevented during 1941 by this reduction. A gain in efficiency? The record speaks for itself.

Since the bombing of Pearl Harbor safety has really come into its own throughout all industry in the United States. President Roosevelt, Donald Nelson, Paul McNutt and other leaders have made statements that accidents are sabotaging our war effort. During 1941, for example, approximately 18,000 workers were killed by accident. According to the National Safety Council 460,000,000 man days were lost due to accidents, most of which could have been easily prevented. Transformed into war production these lost man hours would have produced 20 more battleships, 100 more destroyers, 9000 more bombers and 40,000 more tanks.

According to figures just released by the federal government approximately 20,000,000 more persons will be needed by the end of 1943 to augment our war program. This is going to make heavy inroads into the manpower of the nation and increase the value of each skilled worker. It is just common sense then to take steps to protect that valued asset, the trained worker. To accomplish this task an effort will be made to reach every worker throughout the country emphasizing the necessity of working safely for war production.

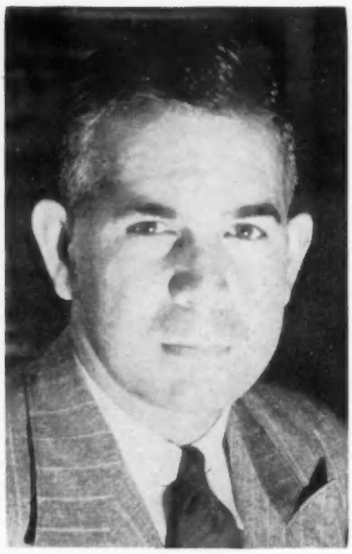
For instance, one approach to the problem will be something like this: This is going to be a war of production and America needs every man and woman to produce during the next few

months, it is an all-out war and we must make an all-out effort. Only sound, healthy workers can produce war goods, the sick, the crippled are just an additional hindrance to this country. Moreover, accidents usually result in damaged tools and equipment; to replace or repair them requires vital material. At the same time our Army and Navy need metal badly; so, in effect, accidents are robbing the soldiers and sailors of guns and tanks and planes. In addition, accidental injuries call for medical equipment and supplies, both of which are needed by our military, thus by preventing injury to ourselves we are conserving badly needed medical supplies for our wounded boys in uniform.

Safety's Three "E's"

Because of its vital part in this war effort, the petroleum industry is going to have an increasingly important part to play in the reduction of accidental injuries among its workers. The figures quoted earlier show that while the industry has decreased its disabling injury rate approximately 65 percent during the past 12 years, it will be called upon to decrease it considerably more during the next few months. Within 12 more years, throughout the industry, the disabling injury will be regarded as an exception rather than the rule by continuing to apply scientific media, known as the three "E's," lost time due to injuries will continue to decline.

Just what are these three "E's" and how does the proper application affect not only accident prevention but general efficiency as well? Let's all agree to begin with, that safety and good operation are one and the same thing.



J. B. HARRIS

Safety director for Arkansas Natural Gas Corporation, Shreveport, Louisiana, after attending Southwestern University and University of Missouri, joined the company in 1936 as junior engineer, advanced to chief clerk of the insurance department in 1937, and has been safety director since November, 1939. He is a member of the executive committee of the Petroleum Section of the National Safety Council, and editor of *Petroleum Safety*, monthly newsletter of the Petroleum Section of the Council.

Safety shoes prevent injuries to feet of petroleum workers. (Photos by J. E. Hampson.)

If a job is properly done it is safely done.

First, there is the "E" known as engineering. This is primarily the managerial responsibility, though in reality responsibility rests with management for all phases of safety activity. Proper application of this measure calls for proper layout, providing adequate safeguards, providing proper safety equipment and generally making the conditions under which the men work as safe as possible. This is the first and a very important step, for unless management shows that it has a genuine interest in the matter and proves it by making the job safe, then the men are not going to take it very seriously.

Second, a mighty important "E" is education. This is sometimes looked on as a long range matter, although oil workers generally have now been sold on the value of safety to themselves and their families. By means of posters, articles in company magazines, movies, safety meetings, letters from the management and other well known devices, the worker is subjected to propaganda on all sides to the effect that the safe way is the proper way to do the job. He must be sold and then resold on the idea that safety helps him earn a living.

Here again the question of the labor shortage crops up. More and more new workers are being hired daily and these workers, untried and unskilled, not only are a hazard to themselves, but to the men with whom they work. This can be solved only by a planned program of training. New men must be instructed by their foremen and shown how to do the job properly. Too much instruction in the past has consisted of merely, "Here it is, now be careful, because we don't want you to get hurt." The new man does not know, therefore he must be taught. The best method of teaching is by explanation, demonstration and performance. Once the man is shown the hazards of his work and how to best avoid them, it is a matter of supervision on the part of the foreman to see that he carries out his instruction.

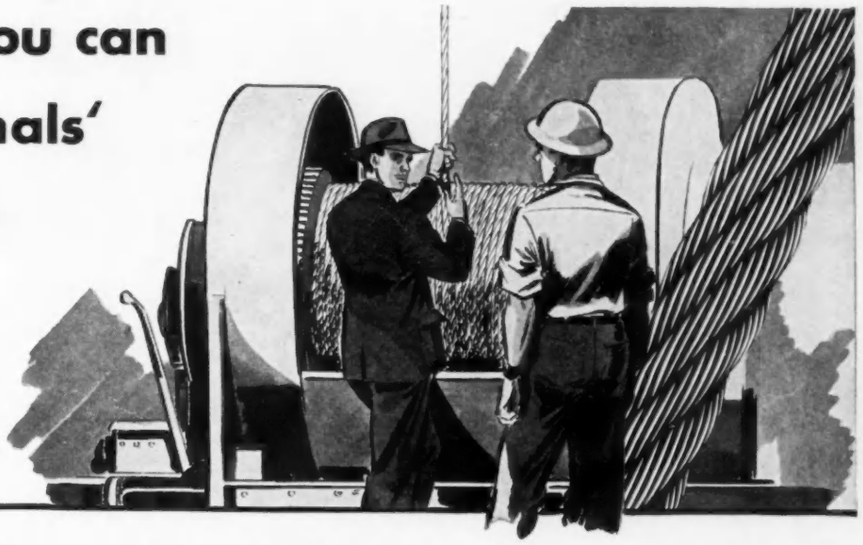
The final "E" is enforcement. Here again management steps into the picture through the foreman. The chief duty of the foreman is to see that the policies outlined by management are carried out, since safety is a definite policy outlined by management, the foreman must continually check and see that all three phases, all three "E's" are enforced.

Safety Results

What are some of the results that can be expected from a well planned, properly executed safety program?

First, a marked decrease in costs of accidents. Direct costs such as medical

"Here's how you can spot the 'criminals' that steal wire rope life...



Look for them regularly... to save your time and money... and America's steel

"IF YOU WANT to get every hour of safe service that's built into your ropes, tell your maintenance men to get up on the rigs regularly . . . up where the wire rope operates. Tell them how to inspect it . . . how to look for the clues to what is damaging your wire rope and how to establish *your own standards* for deciding when it's necessary and economical to replace your wire ropes.

As a first step, tell them a rope should be judged by the condition of the most severely damaged lay . . . one rope lay being that length of rope in which one strand makes one complete revolution around the rope...

To select the worst lay, make a counting of the broken wires. Watch to see if the breaks are concentrated in one or two strands. If this is the case, the rope will be considerably weaker than if they are evenly distributed.

You'll probably find some breaks caused by *Abrasion.* In extreme cases they look like this . . .

and even when not worn through, any removal of metal due to wear weakens the rope in direct proportion. Abrasion breaks occur most frequently where rope goes over sheaves and drums.

There may be breaks caused by *Fatigue* which look like this . . .

and occur where the rope has been bent around too small a radius too often or has been subject to vibration or whipping. Fatigue breaks also occur after the wire has been damaged by *Corrosion* which shows up as pitting on the surface of the wire. Improper lubrication is to blame and contributes to tension and abrasion breaks as well.

There may be breaks caused by *Mechanical Abuse.* This cut or gouged wire is one example . . .

Careless handling during installation or an accident on the job may cause cut wires like this or mashed wires . . . with flattened or spread ends. Mechanical abuse sometimes may so weaken the wire that it will fail in tension.

Finally, if there are breaks caused by *Tension* they will look like this . . .

And will show one side of the broken wire cupped and the other coned. Tension breaks are always caused by an overload on the wires, which may or may not have been weakened by abrasive wear, by corrosion, or by mechanical abuse. When tension breaks are found, it is usually obvious that the rope is unfit for further duty and in any event should be discarded.

As a last step, have a record kept of the condition and the service life of each wire rope, cut out the worst section when the rope is taken off and send it on to the manufacturer for an ultimate strength test. This will complete your inspection record and form a basis for future inspection and condemnation decisions.

In this way, you'll be on the way to getting the maximum useful rope life built into every inch of Roebling "Blue Center" Steel Wire Rope—without taking chances on untimely and dangerous breakdown of equipment vital to wartime production schedules."

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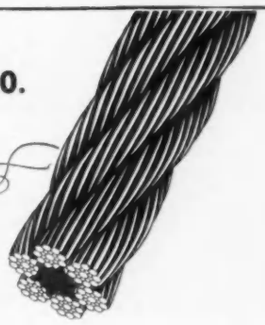
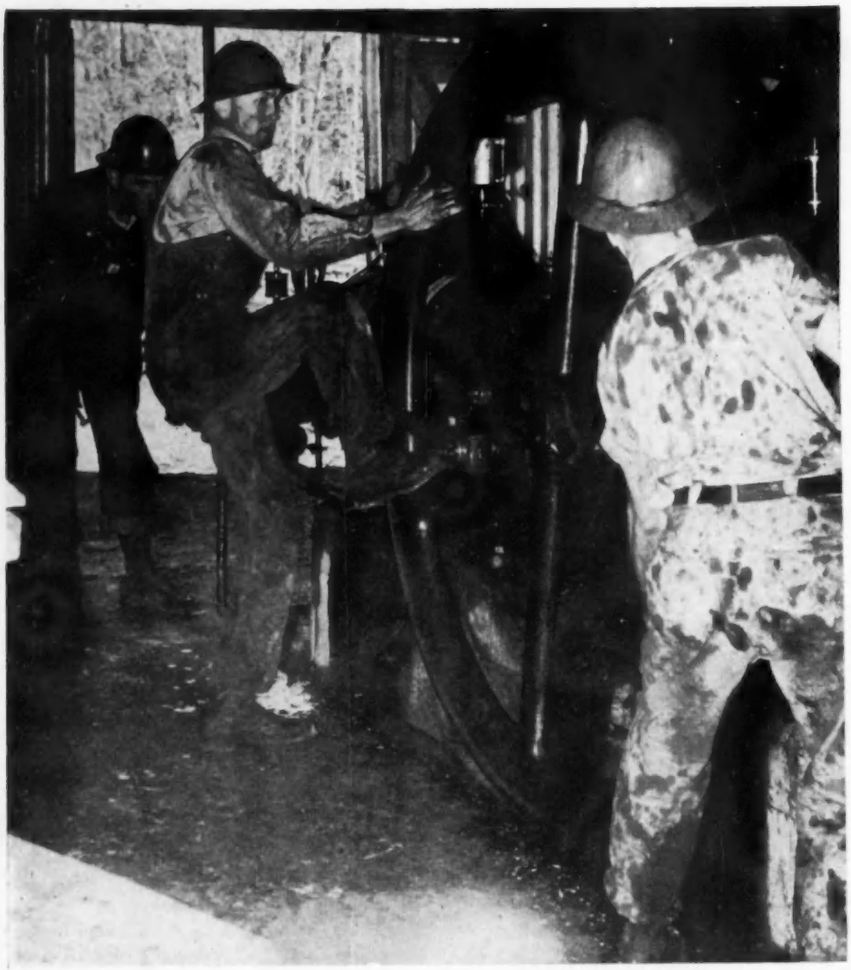


ROEBLING
"Blue Center"
STEEL WIRE ROPE
PREFORMED OR NON-PREFORMED



Hazard in oil production operations can be overcome by the three "E's" of safety: Engineering, Education and Enforcement. (Photos by J. E. Hampson.)

and hospital bills, compensation payments and insurance rates will all be substantially reduced.

Second, reduction of indirect costs of accidents. These include cost of repairing damaged material or replacement of broken tools and equipment, time spent by other workers in assisting the injured man, the time of the foreman and officials in investigating and handling the details of the case. Another important factor is the fact that a marked decrease in production is noticed after a serious accident. All these, while not charged directly to the accident on the books of the company are nevertheless expenses that must be borne by the employer.

Third, improved relations between management and men. Once convinced that the company is seriously sold on prevention of injuries, the men take a real interest in the matter and go at it wholeheartedly. Safety meetings give supervisors and men an opportunity to discuss accident-prevention problems together, and if properly conducted provide an excellent place to improve relations.

Fourth, generally increased efficiency results from this program. This can be expected and can be accomplished. It is only logical that accidents impair the efficiency of a gang or crew and the opposite can be expected when accidents are prevented. Moreover, since accidents are chiefly prevented by carefully planning each job in advance, supervisors and men are improving their working methods. The old theory that safety "slows up the work" has long since been discarded by thinking supervisors. As a matter of fact, although much of the needless haste that cripples men has been eliminated, careful job planning has usually sped up the work.

The railroads of this country learned long ago that instead of slowing down schedules, safety made it possible to speed up train operations. This is just one more example of the fact that safety is good operation.

These three "E's" of safety, engineering, education and enforcement, will tend to grow in importance more and more during the coming months of war. The widespread application of these factors will show marked reduction in disabling and fatal injuries, reduction of accident costs, and on the other hand will increase profit, improve employer-employe relations and increase efficiency.

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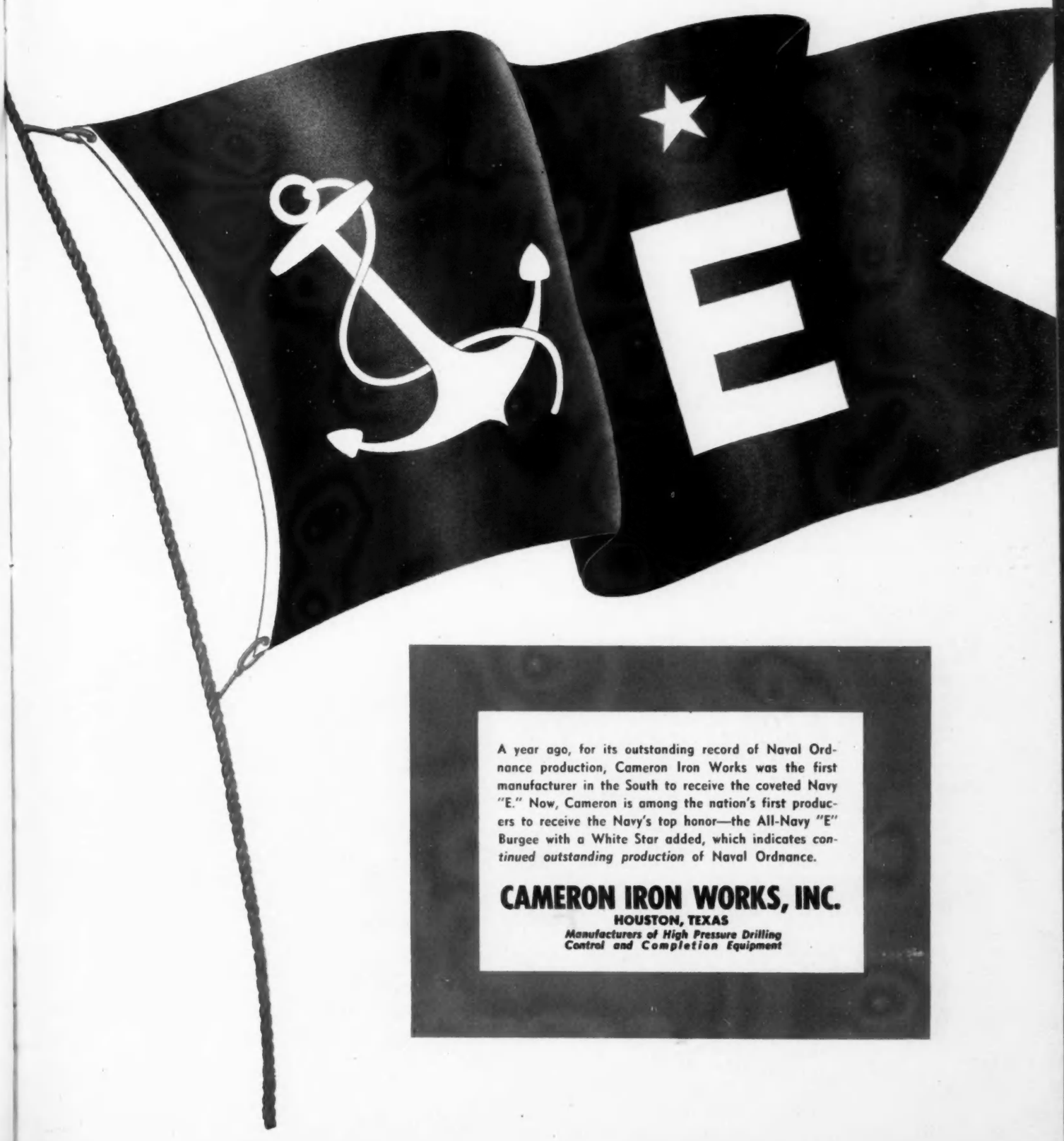

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Portable Compressor Unit Eliminates Shutdown Dangers

By JOHN C. ALBRIGHT

TO PREVENT extensive shutdown resulting from loss of air, and to expedite any operation requiring compressed air in reasonable quantities for comparatively short duration while repairs are made, a simple portable utility compressor unit can be built so it can be moved rapidly and put in instant operation after being towed to the point of use.

A front axle assembly from a salvaged automobile, one having good springs and properly aligned wheels, forms the basis. The bed-plate subsequently attached to the spring shackles depends somewhat on the size and layout of the compressor and engine to be used. The machine illustrated, used by a West Coast oil company, is powered by a conventional single cylinder air-cooled gasoline engine that drives a two-stage V-type air compressor through belts and grooved pulleys. On each side of the engine and compressor assembly are the storage drums which may be filled with compressed air before the machine is towed to the point of use, and which receives the air from the compressor on the job while the machine is operating. The supporting bed plate is a rectangular sheet of medium heavy steel, substantial enough to prevent sagging and distortion.

Both engine and compressor are mounted on a raised member, made by using a wide section of channel iron so that the bed plate bolts may be adjusted readily and tightened when necessary. Slotted holes for mounting the engine are placed in the channel iron, with an adjusting rod for taking up the slack from the driving V-belts. The compressor is set ahead of the engine and the entire assembly is located so more weight is in front of the axle than behind. This provides stability when towing and weight enough to hold the unit level and in place when detached from the towing vehicle.

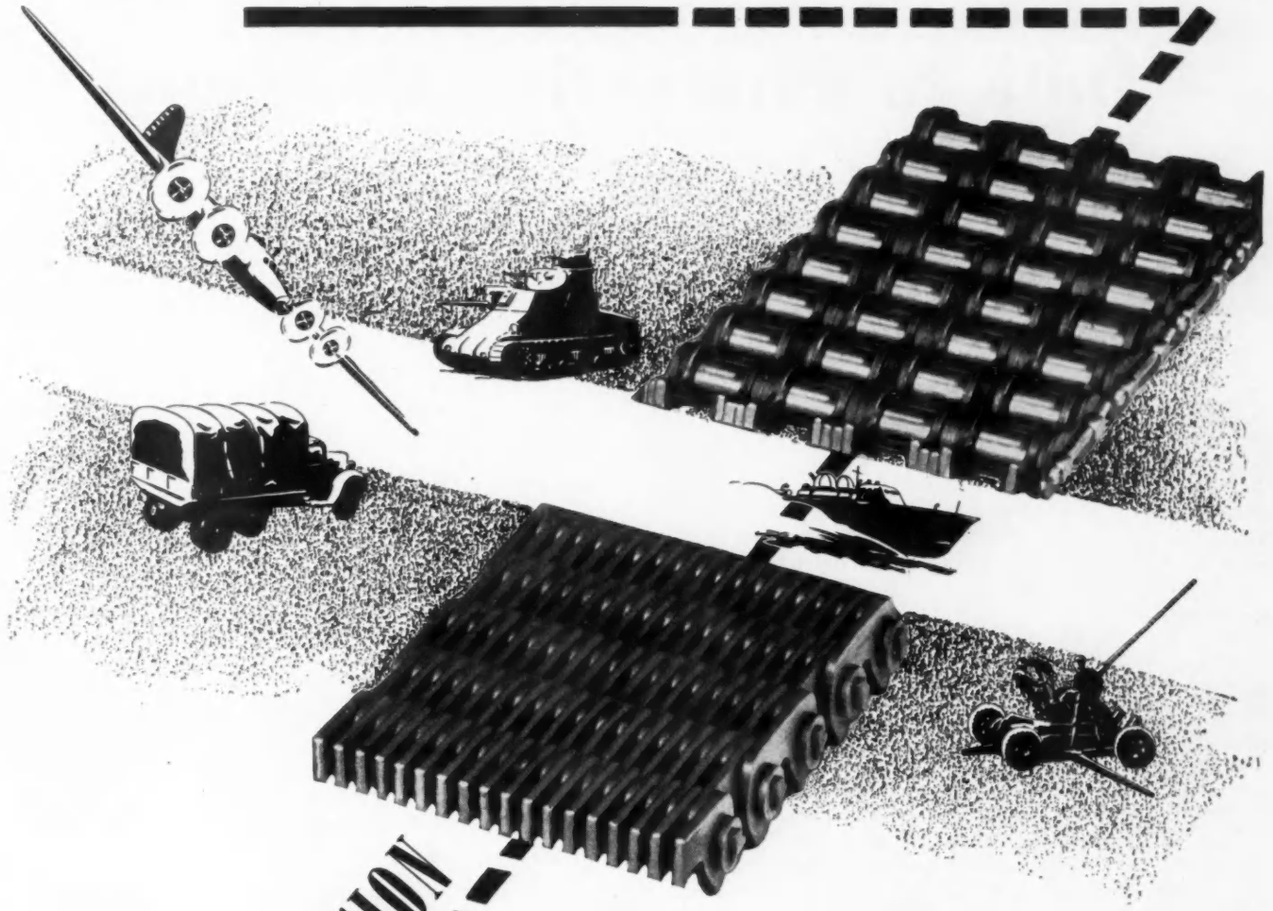
The towing tongue is made of a section of two-inch tubing bolted to the bed-plate of the unit and is equipped with a standard ball and socket towing clamp. A convenient hand-hold ring to facilitate lifting and attaching the socket on the towing ball is welded to the top of the tongue at the front and above the tongue rest, or support. The support attached to the lower side of the tongue is useful, not only to support the front of the machine but to act as a brake so that rolling is prevented after being detached from the towing vehicle.

A pair of circular plates are welded to the tongue just behind the socket clamp and beneath the hand-hold ring. Substantial flat steel is used for these plates so that distortion is eliminated when the machine receives the usual rough handling in an oil field where time is the essence of a job to be completed. The support has the appearance of being made from a piece of channel iron with wide sides at the top where the retaining bolt joins it to the center of the circular plates. A flat plate is welded to the foot of the support extending slightly on all sides to dig into the ground when the tongue is lowered from the tow bar. Several holes are bored near the perimeter of the circular plates to be used as stops for adjusting the angle of the supporting foot. A common dowel pin is used to lock the foot in position, whether vertical, ahead or back of center. If the machine is stopped near a well with the grade sloping in the direction in which the tongue is pointed, the foot is set ahead and acts as a brake to prevent the unit from rolling. If, for example, the machine is stopped in a reversed position with the lower side of the grade at the rear, the support is locked in a reversed position, digging into the soil and preventing the machine from rolling backwards. The center hole is used when the machine is stored and rolling is not to be expected from any direction. On the road, the support is hooked folded back against the tongue.

A tail light is attached to the rear of the machine with cables equipped with conventional plugs for slipping into sockets ordinarily applied to the vehicle which is used for towing. Reflector plates show the trailed vehicle so that the rear light may not necessarily be a combination stop and tail light, but safety demands that the rear be well lighted. Standard piping is provided to handle the air and pressure gauges indicate the amount of air in storage for use when the machine is brought to the location for use.

Portable air compressor unit mounted on front axle of small car having tongue and ball hitch for towing anywhere it may be needed.

VITAL *LIFE LINE* IN WAR PRODUCTION



POWER TRANSMISSION

As vital as any production tool, the transmission of power directly affects every branch of war production. On it, to a good degree, depends the speed, accuracy and quality of every machine.

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Applying Bottom-Hole Pressure Data to Production Problems

PART 2

Application of Bottom-Hole Pressure and Fluid Level Data to Pumping Wells

By EMORY N. KEMLER, Professor of Mechanical Engineering, Purdue University

ONE serious difficulty in the study of oil-production problems from an engineering standpoint is that of obtaining accurate and complete information. Because of the many practical operating problems involved and the general attempt to keep investment and operating expenses at a minimum, leases or wells are not always hooked up to permit easy or complete testing. Even when so arranged that they can be adequately tested, the many operating difficulties involved make it difficult to get a completely controlled test. Figure 1 shows production and bottom-hole-pressure data obtained from a complete production test. In this figure all values are plotted against time in hours for which the test was in progress. Before the test was made a bottom-hole-pressure bomb was run in the pump anchor. By the time the test had started, the pressure had built up to the reservoir pressure of 1082 pounds per square inch. Because of difficulties of maintaining speed control closer than about ± ½ strokes per minute and variation in efficiency of the bottom-hole pump, the overall test is not ideal. It does, however, show very clearly how the bottom-hole pressure varies with time and how bottom-hole pressure may affect pump performance, production and horsepower requirements. The bottom-hole pressure decreases quite rapidly during the first few hours and at the end of 8 hours has very nearly reached a steady state condition. Because of the variations mentioned, constant production could not be maintained and some fluctuation in bottom-hole pressure resulted. When the fluid level in the well was high, the volumetric efficiency of the pump was considerably higher than when pumping near bottom. While the volumetric efficiency is influenced by many other factors including the shape of the dynamometer card, the fluid level probably has more to do with the value in this case than the other items involved.

Tests of the type shown in Figure 1 can be used to determine well capacity. As was pointed out in the preceding article of this series, the production to be expected will depend on the decrease in bottom-hole pressure when pro-

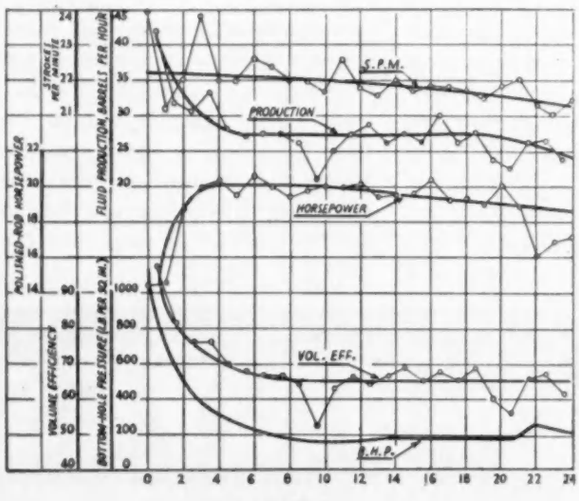

FIGURE 1
Pumping test, 3300-foot well.

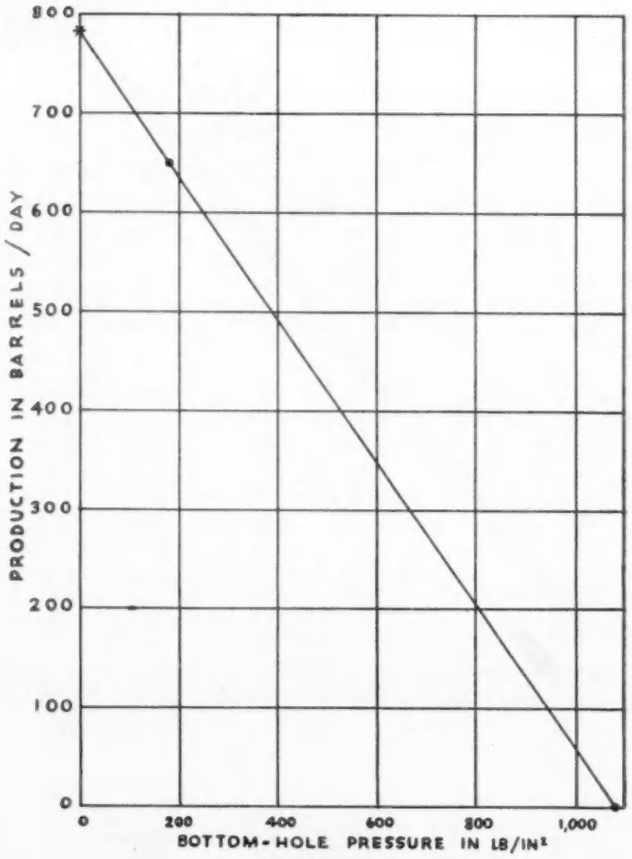

FIGURE 2
Determination of well capacity.

LEST YOU FORGET

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So, for the duration please help us "keep the home fires burning" by remembering not to forget us.

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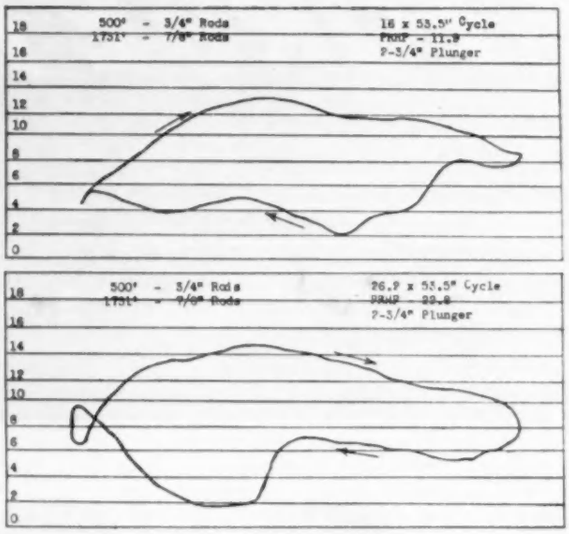


BHP = Bottom-hole pressure.
PRHP = Polished-rod horsepower.

FIGURE 3
Dynomometer Cards.

ducing as compared with its value when not producing. A very convenient means of determining the theoretical well capacity is to plot production against the corresponding bottom-hole pressure. Figure 2 shows such a plot for the data shown in Figure 1. The bottom-hole pressure when not producing was 1082 pounds per square inch and when producing at the rate of 27 barrels an hour or 648 barrels per day was 188 pounds per square inch. If a straight line is drawn through these two points (see circles in Figure 2) and extrapolated back to zero bottom-hole pressure, the resulting value will be the theoretical well capacity. In this case it will be approximately 780 barrels per day.

Where more than one production rate is used, the points may not line up into one straight line. This may occur because of errors in test data or because they do not form such a line. The mass of accurately taken data indicates that for moderate flow rates the relation is linear. Before discarding such a relation care should be taken to see that the production data were accurately taken, that the well had reached a steady state condition, that is, the bottom-hole pressure was constant before the test started, and the static or reservoir pressure had built up to a maximum value. These things seem simple to carry out but actually may be difficult to put into practice. In the case of small wells, the time to reach a steady state condition may be quite long. Where an attempt is made to take several tests in a short time, deviations may be encountered.

Another type of test on a pumping well where bottom-hole pressure can be used is illustrated by Figures 3, 4 and 5. Figure 3 shows dynamometer cards taken on a well at 16 strokes per minute and 26.2 strokes per minute. At 26.2 strokes per minute the dynamometer card shows a very severe fluid pound which would indicate that the well was being produced at capacity. Even at 16 strokes per minute, some fluid pound is indicated. Figure 4 shows the bottom-hole pressure card taken on the well at the above speeds. The static bottom-hole pressure for the well is very low, being 71 pounds per square inch. The tests at the two production rates of 358 and 598 barrels per day together with the static pressure give three points on a production versus bottom-hole pressure curve. These data are shown in Figure 5, and if extrapolated to zero pounds per inch reservoir pressure would indicate a capacity of 965 barrels per day. In this case well capacity could be increased if gas could be eliminated from the pump to give higher volumetric efficiency.

Bottom-hole pressure data at various rates of production either obtained from use of bottom-hole pressure gauge or fluid-level measurements is helpful in determining the size of quipment which should be installed upon a well. The rational method of determining the size of equipment for use in well is to make preliminary tests with drilling-in equipment in case a well is drilled in with cable tools or with a temporary pumping unit. In this case a well does not need to be produced at full capacity since bottom-hole pressure data combined with production data at any reasonable rate of, say 10 percent of the well's capacity or more, will permit extrapolation to maximum conditions. While some extra expenses would be involved in such a procedure, the proper fitting of equipment to the well will justify such expense where variable well size may be expected. The investment of a few hundred dollars in testing may result in several thousand dollars savings in investment and capital charges and may possibly influence operating expense either through lower maintenance costs or less operating labor required.

The bottom-hole producing pressure also can be obtained with such systems as the submergible centrifugal unit or the hydraulic pumping unit in very much the same manner as for a pumping well. In the case of the electric submerged centrifugal pump, it is possible to obtain some ideas as to the bottom-hole pressure by inserting a pressure gauge in the discharge line from the pump. The procedure for deter-

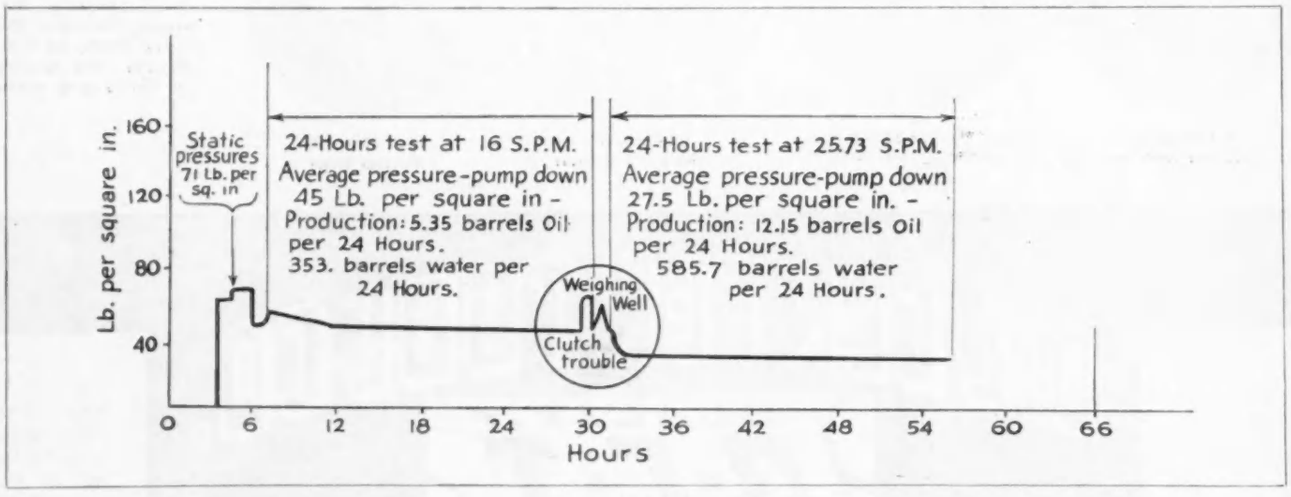
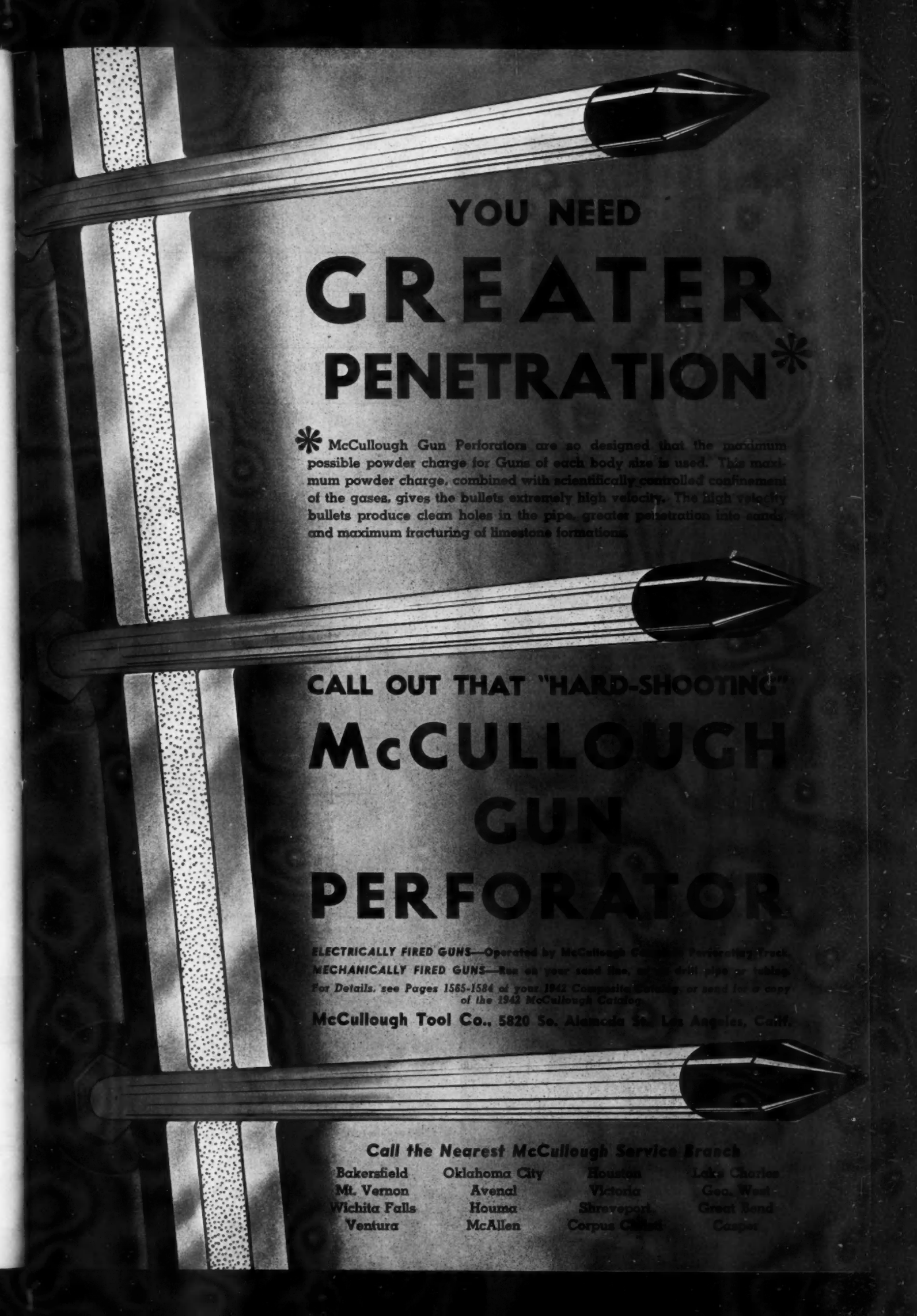


FIGURE 4
Bottom-Hole-Pressure Card.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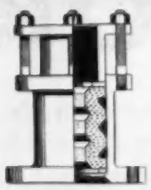
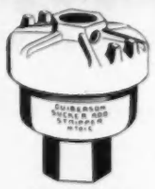


Tubing Stripper

Flow Valve



Sucker Rod Stripper

mining the change in bottom-hole pressure is as follows: When the well has been standing for sufficient time so that a fluid level or bottom-hole pressure has been built up to the maximum value, the pump is started with the tubing full of fluid. The tubing is closed and a pressure reading is taken by using a gauge mounted on the tubing just ahead of the valve. The well is then allowed to produce at any given

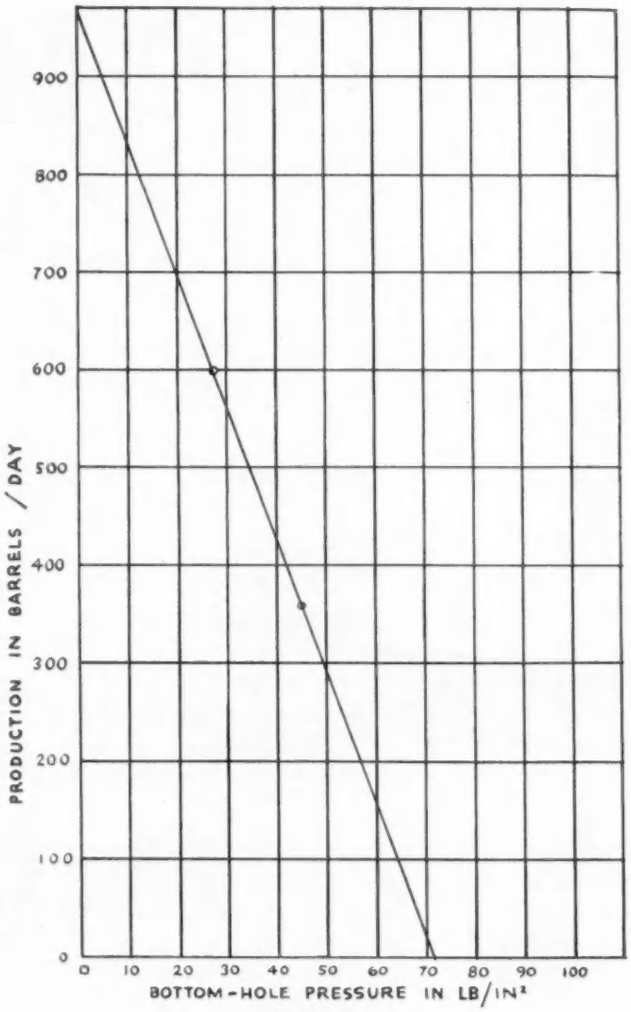


FIGURE 5
Bottom-hole pressure vs. production

rate at any sufficient period so that steady state conditions exist. The valve is again closed and a pressure reading taken. Since the centrifugal pump running at constant speed generates the same head when the discharge is closed, the difference between gauge reading after the well has been closed in and the gauge reading taken after it has produced at the constant rate will give a measurement of the reduction of bottom-hole pressure. It should be pointed out that this difference in pressure must be corrected if there is a change in average specific gravity of the fluid in the tubing column. Such a system would, of course, have an advantage where the pump is run on packer or where for some other reason it is inconvenient to determine the fluid level or bottom-hole pressure.

As was indicated above, there are many cases where it is possible to obtain sufficient information on well operation. By use of one of the acoustical methods which in principle measure the time required for a pressure wave to go from the surface to the fluid level and back, it is possible to follow changes in fluid level which is equivalent to having bottom-hole pressure data. This pressure wave may be set up by

using a high-pressure source of gas or air or by the firing of a small cartridge or dynamite cap. Figure 6 shows what might be considered a typical record as obtained from such an instrument where tubing collars are not shown. Because of variation of velocity of sound because of variations in temperature and gas composition, it is not feasible to use the velocity of sound as a means of making these calculations unless some marker is present to give a check on the velocity. Where the tubing has been tallied into the well or where standard lengths are used, it is possible to determine the depth to the fluid by counting the number of collars. Figure 7 shows such an example. Where the well is so deep that sufficient amplification cannot be obtained to count collars, the average velocity as determined from a portion of the string can be used as a basis for calculating the total depth. In this case the time to traverse a given number of collars acts as a calibrating method. The advantage of this method of measuring fluid levels is that it does not in general require the shutting down of the well or require an expensive rod or tubing job. The results can also be obtained immediately at the surface without waiting for pulling the pump. Some of the disadvantages are that it does not give a complete record and also may require many instantaneous values. Where it is desired to know what is going on in the reservoir over a considerable period, the use of a bottom-hole-pressure gauge may be desirable. Another very important factor involved is that of converting the fluid-level readings to bottom-hole pressure readings. This means that the average specific gravity or density of the fluid in the annular space must be known. In case of a well making oil and water, this may not always be so readily determined. In case a well makes some free gas through the annular space, further difficulty may arise in attempting to estimate the average specific gravity. In some cases it is possible that a froth or foam condition may exist on the surface of the fluid at the annular space and a true reflection may not be obtained. Some of these difficulties can be overcome. For most purposes, this type of instrument will give satisfactory results.

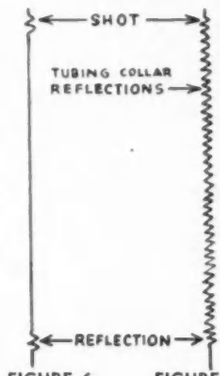


FIGURE 6 FIGURE 7

The use of bottom-hole pressure or fluid level data as a means of determining the well's capacity to produce has been applied to the determination of so-called potentials. While large amounts of fluid can be produced from moderate depths with sucker-rod-type pumping equipment, the cost required to obtain this production is not generally desirable. The size of equipment required to obtain this production is out of line with that required for normal operation under prorated conditions for a considerable portion of the life of the field. The use of fluid-level or bottom-hole-pressure data have been used to obtain the index of a well's capacity to produce and have resulted in considerable reductions in investment, operating costs and operating labor. Inasmuch as tests commonly made previous to the introduction of the productivity indexes were actually a measure of the equipment's ability to produce, the introduction of some method such as the productivity method will give on the average just as satisfactory results even though they are not absolutely correct. For areas such as Western Kansas where little or no gas is produced with the oil, the above method will work with the limits of accuracy with which data can be obtained.

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Bottom-Hole Measurements on Pumping Wells, by J. J. Jakosky, A.I.M.E. 1939 Transactions.

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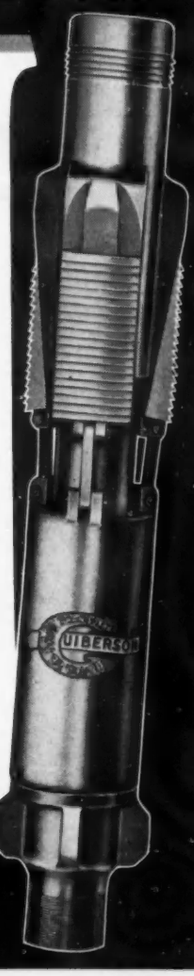
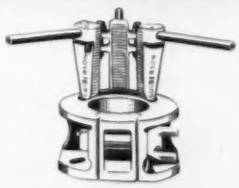


Drilling Head



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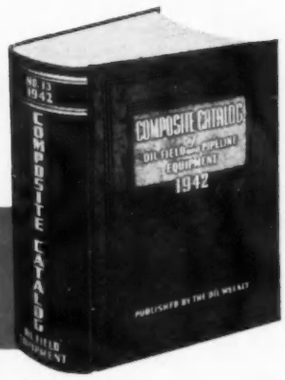

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A One-Man Device for Racking Heavy Drums

ONE-MAN handling of oil drums is a chore around the plant which requires a knack if the container is to be canted from a position of rest on either end. Where the drums are not fitted with some type of hand-operated or air-actuated flow system to enable a given quantity to be withdrawn without waste, the drum must be placed on its side, and supported at a height which will permit placing a can under the spout of the spigot or outflow valve.

One company finding that employes working at isolated points would attempt to rack heavy drums unassisted, and that such practice resulted in a practically unending stream of minor injuries, such as back strains, bruised fingers or mashed toes, undertook to provide a simple drum-handling rack which would permit transfer of individual drums without shifting adjoining units, and which would employ leverage or a rolling principle to effect change of drum position with a minimum outlay of strength.

The design of the one-man racking device has practically eliminated accidents, and permits a drum to be racked at pouring height with no more effort than is required to pull it off center. The unit is essentially a jig or framework constructed to fit and hold the standard drum. To the cradle are fitted two semi-elliptical runners so proportioned in their curvature that the center of gravity of a loaded drum is well behind the pivotal plane. This avoids a construction which would tend to have the drum overbalance in a forward direction, or toward the operator.

The method of employment is to hang the top or front bar over the quick-acting valve, faucet or other outlet fixed into the upper end of the drum. The drum is then tipped or rocked slightly backward or away from the rack. This tends to cant the device toward the drum, the motion forcing the supporting fingers under the lower rim of the drum and engaging them there as the drum rocks back to an even keel.

A sharp pull toward the rack then forces the drum over its center of gravity, the weight of the unit being transmitted gradually up the curve of the elliptical runners without shock or stoppage once the motion is begun. As the drum tips farther, the weight to be handled becomes less until the entire weight is borne by the runners, which then may be blocked in position to avoid canting or tipping if loaded on the top surface.

By constructing a number of racks of this type, and having an oil distribution platform wide enough to permit the full drums to be upended behind the row of racks, it is possible to bring in or remove any unit from a row of drums without contacting or disturbing adjacent units, and without introducing a hazard to the operator.

The handle section hooked over the spigot, drum is canted slightly away from the cradle, allowing the base spuds to slip under and engage lower rim of the drum. A sharp tug against the upper edge of the drum transfers a portion of the weight to the rockers, progressive weight shift carrying the drum to a horizontal position, where rocker proportioning prevents further canting.

California Developing Control Procedure for Production

BY TRIAL and error, California is gradually developing its crude oil production control procedure under the guidance of the Office of Petroleum Coordinator. Since the state is without any form of state legislation to direct proration procedure, it is dependent upon the wartime emergency powers of the federal administration for enforcement of conservation and production control.

In the eight months since Recommendation No. 19 was issued by Coordinator Ickes for allocation and conservation of oil, the Production Committee for District No. 5, in carrying out the powers granted by this recommendation, has evolved a procedure which, with modifications in future months to meet changing conditions, is expected to serve as basis for procedure for the "duration."

An important feature of the present program is the part played by the federal government in designating procedure to be followed. Recommendation No. 19 provides that all schedules must be approved by the chief counsel of OPC; if and when they are approved, they become the recommended pool quotas for each of the pools in the state for the month in question, and the deputy coordinator directs that they be put into effect.

Another important feature of the present method is that the crude allocated to the pools be based upon satisfaction of the demand for essential products. This basis, brought about by the war, is entirely new in California. Under the voluntary conservation program as it developed in the state during the years 1929 down to the beginning of 1942, no distinction was made in allocation to pools or wells because of the type of oil they produced. With the outbreak of war, however, there has been a relative decline in demand for gasoline, together with a marked increase in demand for fuel oil. It has therefore been necessary to allocate an increasing share of the total state quota to pools which produce crude high in fuel-oil content, while decreasing the allocation to pools whose crude is high in gasoline content, in order to satisfy the demand for fuel oil while preventing a glut of gasoline in storage.

The present method of allocation seems to be approaching a solution of the two problems, those of satisfying both federal requirements and war demands.

Federal government requirements have been established through the approval of all schedules submitted "with reservations." The reservations have in fact constituted directives to the production committee, issued to clarify allocation and conservation principles which OPC desired to have established. The reservations have frequently been coupled with statements to the effect that if certain practices were continued, subsequent schedules could not be approved.

This procedure illustrates a fundamental difference in relationship between the California industry and the federal government, compared with the relationship between the industry in other major-producing states and the federal government.

California has no control law, whereas all other states of significant oil producing stature, with the exception of Illinois where output is not prorated, do have control laws. Other states receive a monthly production quota from OPC, with the recommendation that it be followed; the quota is broken down to pools and wells in accordance with the control law in the particular state. California, like other states, receives a total quota, but unlike other states, must develop a method of allocation to the pools, as well as the actual pool quotas themselves, which meet the approval of the federal government. Therefore, since approval of pool quotas in California is reserved to the federal government, the government reaches much further into actual production and conservation practices in California than in any other state.

Principles Established

The principles established by the federal government through its "reservations" in approvals of the schedules for the individual months from March to September, inclusive, have included instructions to the production committee to:

1. Reduce the allocation to light-oil fields where the actual production of iso-butane would not thereby be materially affected;

2. Increase the allocation to heavy-oil fields;

3. Allocate sufficient oil to fields producing gas to satisfy the demand for iso-butane "when considered in connection with the iso-butane obtained from less prolific sources";

4. Reduce the allocation to high-gas-oil-ratio fields to the extent necessary to eliminate the blow of gas to the air;

5. Increase the number of fields exempt from restriction, "particularly those whose production will assist in satisfying the demand for heavy oil";

6. Give less weight to minimum rates of production as a "matter of interfield allocation" since such minima "may well lead, in the future, to a lack of balance between the kinds of oil necessary for the prosecution of the war or cause the venting of natural gas to the air";

7. Provide compensating allocations in so far as possible where Conservation Order M-68 has prevented offset drilling;

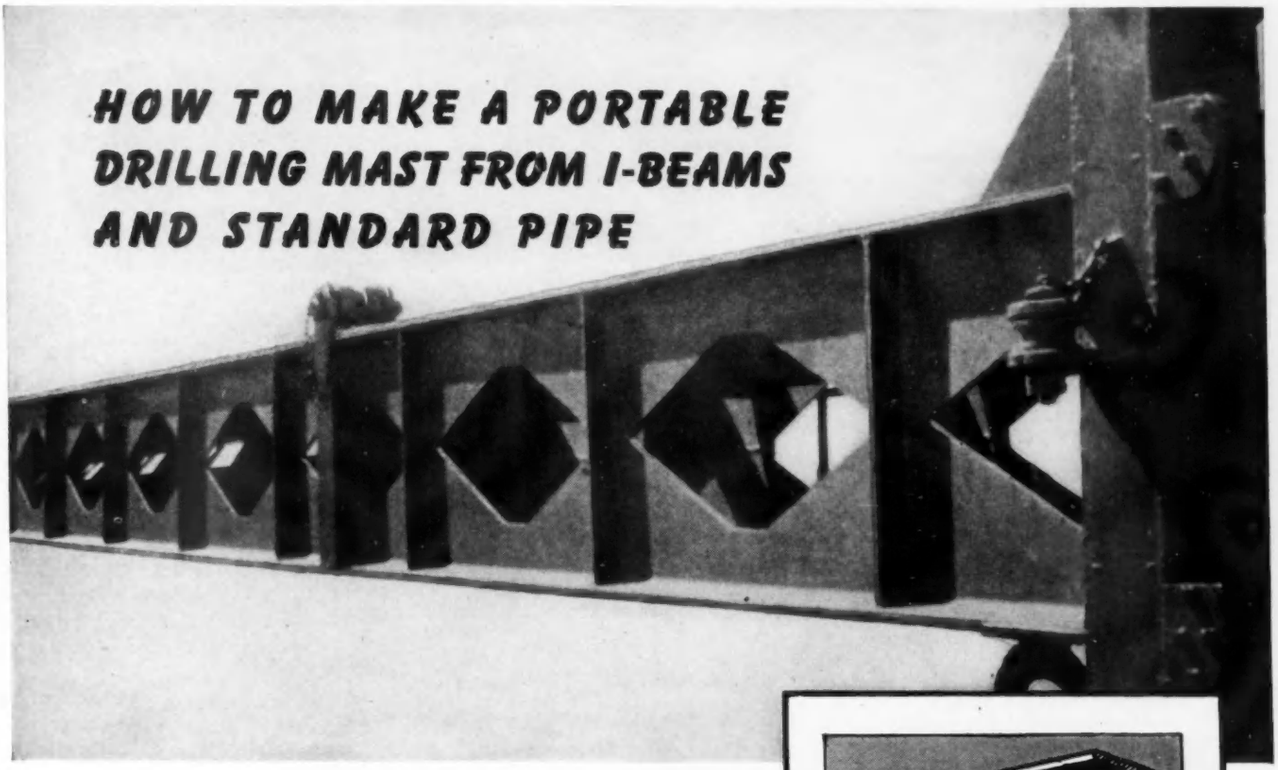
8. Base restrictions of production on reservoir characteristics of pools as entities, rather than on individual-well capacities; the pool "maximum efficient rate" not to be the sum of the so-called individual well "maximum efficient rates."

In general, Recommendation No. 19, which has been implemented by these directives as to individual schedules and methods, requires that allocation of oil production in California be made in accordance with recognized engineering principles of production, looking toward the most efficient production of all pools, with the provision that when such methods of production result in a shortage of products needed for the war, or in excessive stocks of products not needed, approved departures may be made.

September Schedule

In developing the September schedule, which can be taken as an example since it is the latest approved and is the closest approach to absolute satisfaction of both governmental and demand requirements yet attained, the production committee first exempted

HOW TO MAKE A PORTABLE DRILLING MAST FROM I-BEAMS AND STANDARD PIPE



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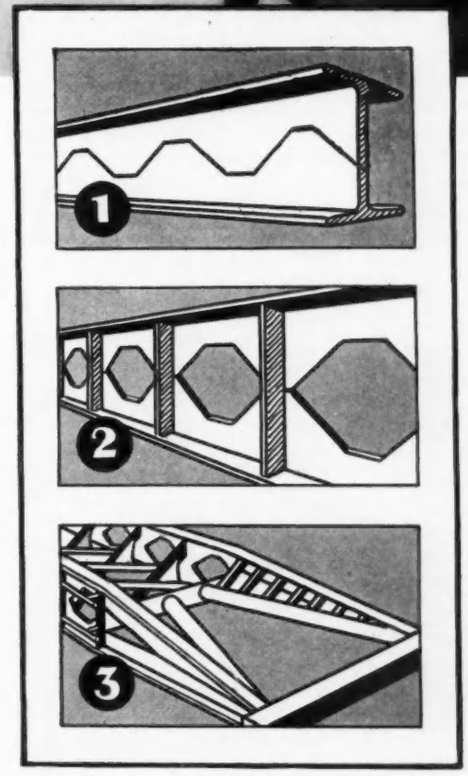

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certain pools from restriction of production. For some of these pools, the exemptions were based upon the pool classification as established by the engineering subcommittee of the production committee, and for others, upon the fuel-oil yield.

Pools are divided into six classes: Ia, b, and c, and IIa, b, and c. Pools in the "I" class are those in which capacity production would result in reduction of ultimate recovery, and those in the "II" class are those in which no appreciable damage to the pool would result from unrestricted output. The subdivisions within classes indicate relative availability of production without artificial lifting, as well as progressive stages of depletion, relative average well size, and utilization of present equipment.

The first exemptions, made before application of the fuel-oil adjustment, included all Class IIb and c pools. Class IIb pools are those which are generally beyond 50 percent depleted, but have productive abilities moderately in excess of the economic minimum; Class IIc pools are usually in the extreme stages of depletion, with capacities not materially in excess of the economic minimum necessary to assure the continuity of production and prevent premature abandonment.

These classes of pools have been exempted from restriction for the past several months, but additional pools were exempted in September in order to supply sufficient fuel oil to satisfy requirements. These exemptions, based upon the fuel-oil content of the crude, included Class I pools whose crude yields 70 percent or more fuel oil, in which case the pools were given allotments equal to their capacity to produce.

Pools in Class I whose crudes yield between 55 and 70 percent fuel oil were allocated their maximum efficient rates of production, and pools in Class IIa whose crudes yield more than 55 percent fuel oil were exempt from restriction and given allotments equal to their productive capacities. Class IIa pools whose production yields less than 55 percent fuel oil were given an unrestricted allotment equal to 50 percent of their capacities, while the remaining 50 percent was restricted in the same way as the quotas were determined for the other non-exempt pools.

The exemptions from restriction on production thus determined totaled 433,719 barrels per day, out of an allocated crude quota of 746,700 barrels per day. An additional 3300 barrels per day was set aside for new completions to be brought on production during September, making the total September quota 750,000 barrels per day. These exemptions were divided among the different classes of pools as follows:

	Barrels Daily
Class IIb, IIc and IIa, containing more than 70 percent fuel oil (exempt)	320,807
Class IIa pools containing between 55 and 70 percent fuel oil (exempt)	15,165
Class I pools containing more than 70 percent fuel oil (exempt)	70,097
Maximum Efficient Rates of Class I pools, containing between 55 and 70 percent fuel oil	27,650
Total	433,719

This figure, when deducted from the total oil allotment of 746,700 barrels per day, left a balance of 312,981 barrels per day to be allotted to the remaining pools. However, the maximum efficient rates of the remaining pools totaled 423,616 barrels per day, which meant that it was necessary to restrict production from these pools by 110,635 barrels per day. This reduction was made by the application of a power factor to the maximum efficient rate, modifying the result obtained by a percentage figure to balance precisely.

Efficient Rate Primary Quota

The basic factor used in setting the primary quota is the maximum efficient rate of production of the pool, determined for all Class I pools by the engineering subcommittee of the production committee. Further studies are being carried on, with the assistance of the field committees and the Administrator's staff of the conservation committee, and revisions of maximum efficient rates are made as more comprehensive data as to individual pools become available.

Important factors used in this calculation include:

1. Size of the reservoir in acre-feet;
2. Volume available to active hydrocarbons;
3. Pressure-volume relationship and amount of gas;
4. Original pressure, subsequent pressure history and indicated trends;
5. Average density of well spacing;
6. Average permeability and variations from the average;
7. Solution gas-oil ratio, subsequent ratio history and indicated trends;
8. Production history and indicated capacity;
9. Well characteristics and productivity indices;
10. The type of control, whether depletion, water drive, or a combination of both;
11. Stage of development and depletion.

There are other factors used when applicable, such as limitations of equipment, volume of gas available for repressuring programs, and the capacity of recycling units.

Maximum efficient rates thus determined are not final and set figures. The engineering subcommittee reviews and revises them as more complete and comprehensive data become available, and has adopted a program of review of pool rates at intervals of not greater than six months, with more frequent reviews for critical pools. One matter that has made review and revision essential is the absence of history as to high pool rates of production and the resultant effect on reservoirs, since most Class I pools have been severely restricted since their discovery, and are only now being required to produce at relatively high rates.

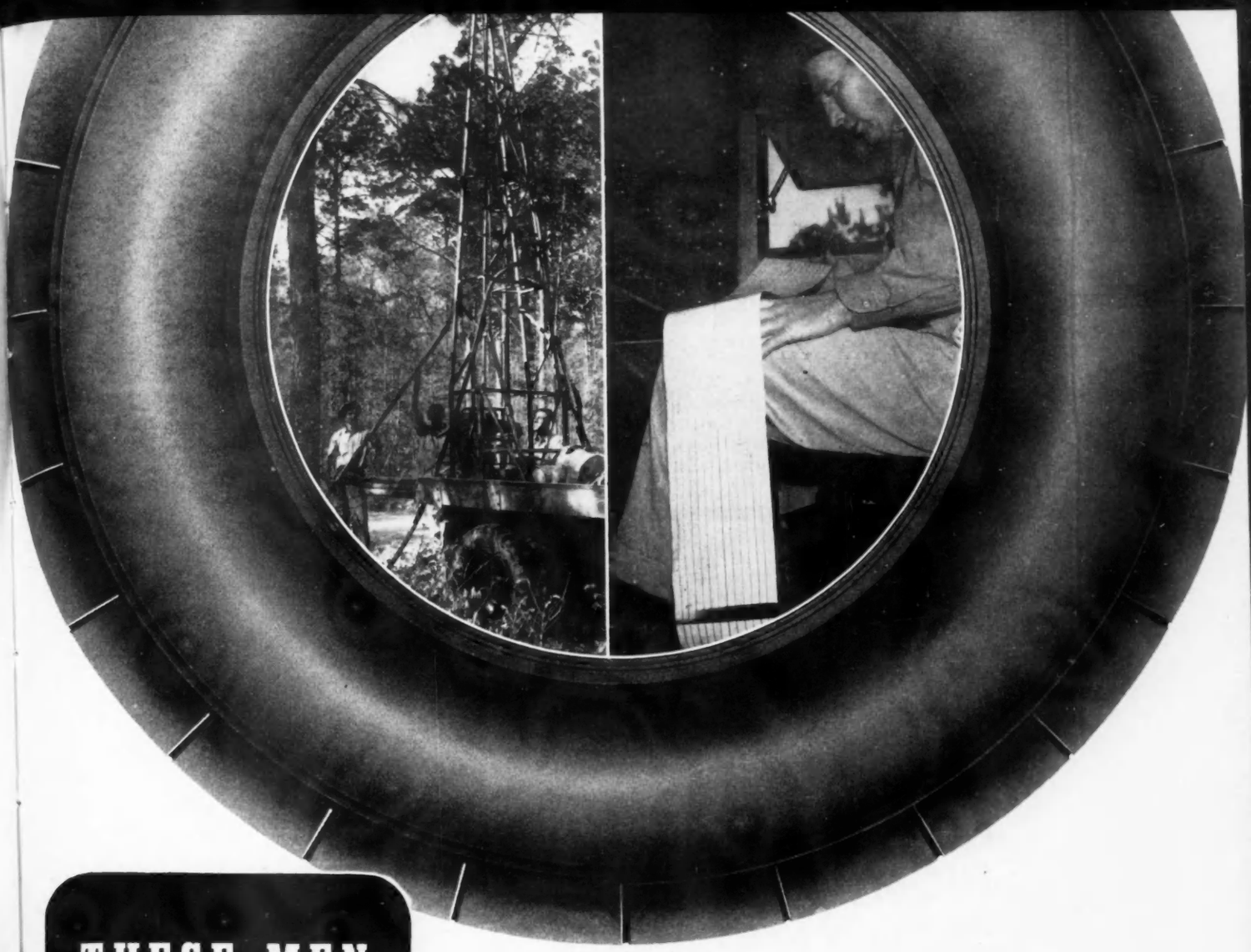
Importance of accurate determination of maximum efficient rates is two-fold. First, under the terms of Recommendation No. 19, they represent the top limit on production levels, unless certification is given a higher rate by the Office of Petroleum Coordinator, and second, they constitute the base to which is applied the power factor and subsequent percentage modification to determine the primary quota for the restricted fields.

In September, the fuel-oil yield of the unrestricted pools and from the primary quotas established for the restricted pools was found to fall short of requirements, making it necessary to apply an adjustment to the primary quotas of the restricted pools, based on the relative fuel yield of the crude, thereby increasing the available fuel oil.

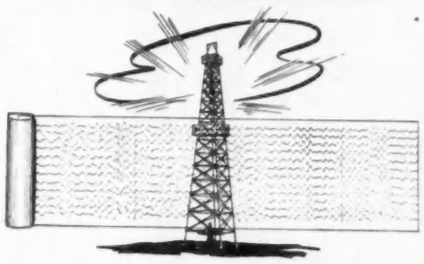
Certain preliminary adjustments to take care of unique conditions were made before fuel-oil modifications were applied to these quotas. Discovery wells were allotted not less than 150 barrels per day for the three months following the month of their completion, under a production committee rule to give discovery wells a three-month 150-barrel daily minimum allotment. Allotments to other fields were reduced to the limit of gas outlets, and one reservoir was given an additional allotment to attain the reservoir minimum efficient rate to minimize waste, established in accordance with a recommendation of the engineering subcommittee.

A fuel-oil adjustment to restricted pools was made. In this adjustment, a straight-line curve was drawn from a point that increased allotment to pools yielding 55 percent fuel oil to their maximum efficient rates, to a point that decreased the allotment to pools yielding 34 percent fuel oil or less by 56.72 percent, zero adjustment falling at 41 percent-fuel-oil yield. The increases were made by applying the indicated percentage to the difference between the primary quota and the maximum efficient rate; the decreases by applying the percentage to the difference between the primary quota and minimum rate.

Preparation of the interpool allocation



THESE MEN MAY BE "GROWING" THE RUBBER FOR YOUR POST-WAR TIRES



High grade, durable synthetic rubber from oil is no longer a laboratory experiment . . . probably much of the rubber to be used in the final, the *victory* stages of our present war will be synthetic rubber from oil. And when America resumes its normal life after the war, automobile tires and many of the other products now made of rubber will be made from synthetic "oil" rubber. Naturally these uses are increasing and will continue to increase our demand for oil. Future uses and demands, yes . . . but the oil must be taken from future oil reserves, too.

That's the job General crews throughout the United States are doing today . . . locating tomorrow's oil reserve for many major oil companies from accurate, dependable seismograph surveys.

General's highly trained men realize the responsibility of their work . . . that results *must* be obtained. And that responsibility is reflected in the thoroughness of today's work. Plan your future drilling operations from General Geophysical reports.

General

GEOPHYSICAL COMPANY HOUSTON

is performed by the administrative office of the conservation committee under direction of the production committee. Pertinent data from the various functional committees, as well as the engineering subcommittee and the statistical committee, are turned over to the administrator's staff. The data developed by this office each month include:

1. Number of ratable wells in each pool;

2. Capacity production for all unrestricted pools, and the engineering subcommittee's report on information augmenting restricted pools;

3. Minimum allotments for restricted pools;

4. New completions, recompletions, and resumptions for all pools for the current month and an estimate for the coming month.

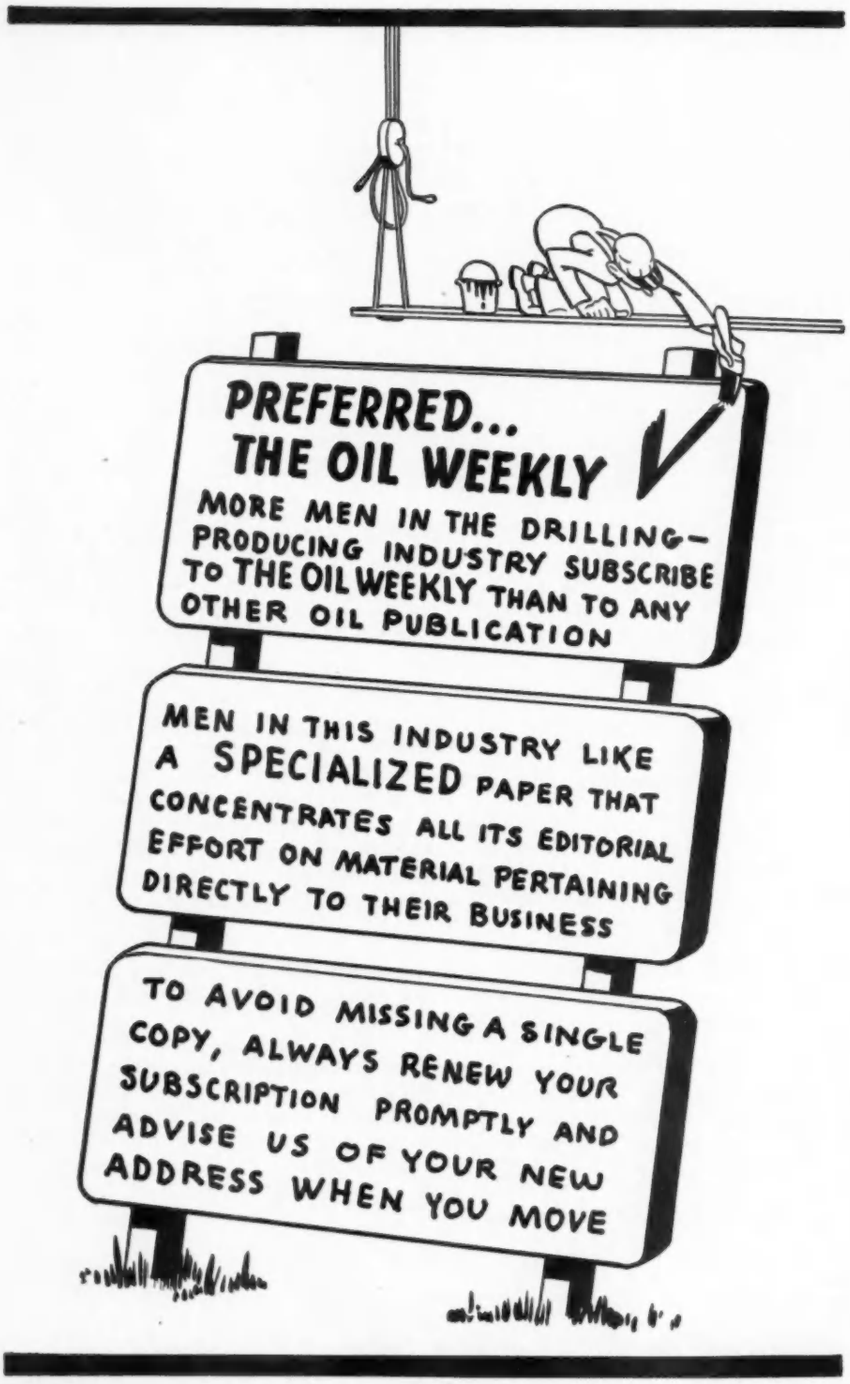
A "derivation of pool crude quotas" is made by the administrator's staff after consideration of these and other pertinent factors, including known requirements for crude, gas and petroleum products, and limitations in transportation, refining, or gas outlets. This report is reviewed in detail by the production committee, and careful consideration is given each phase of the allocation by consultation with a representative of each of the functional committees concerned.

Data as to fuel-oil yields of crudes from the various fields of the state are furnished by the refining committee for the district; transportation conditions affecting crude production are reported by the transportation committee; the natural-gas and natural-gasoline committee relays information as to outlet for natural gas. The latter is particularly important at this time, since OPC has been increasingly insistent that no gas shall be blown to the air in view of prospective demand by domestic and war-industry consumers during the coming winter.

In breaking the total allotment to the state into demand for particular types of products and then relating those products to production from different pools so that the type of crude produced most nearly approaches the ideal raw material, the production committee is advised by the statistical committee of the general committee for the district. This committee develops information as to demand by types of product and the production committee is guided thereby in determining allocations to pools which will most nearly produce the type of oil needed, using the yield figures for the different pools as computed by the refining committee.

In view of the demand for fuel oil, the schedules developed during the eight-month operation of the program have increasingly liberalized allocations to pools which produce heavy crude high in fuel-oil content, while reducing the relative allocations to light-oil pools. The September schedule is the first which shows an estimated balance of supply of fuel oil with requirements for the product. It is estimated that motor fuel and gas and diesel oil will be added to storage somewhat during the month, and that certain other products will be withdrawn from storage, but the products for which war demand is most important will be in balance for the first time.

In view of prospective high winter demand, OPC has insisted that no gas be blown to the air, thereby definitely limiting the allocation to certain heavy-oil fields, Wilmington and Santa Maria Valley in particular. These fields, which produce the type of oil most in demand, are now producing to the limit of their respective gas facilities and outlets, which establishes a ceiling for their oil production. This ceiling applies even though the fields could produce efficiently at higher rates. Elimination of this bottleneck would, in part, relieve the fuel-oil shortage which has made it necessary to produce other fields at rates greater than their maximum efficient rates.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SKF

BALL AND ROLLER BEARINGS

Right

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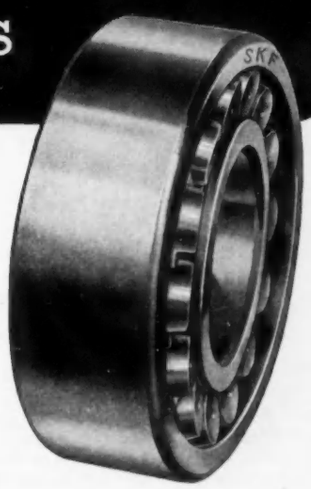

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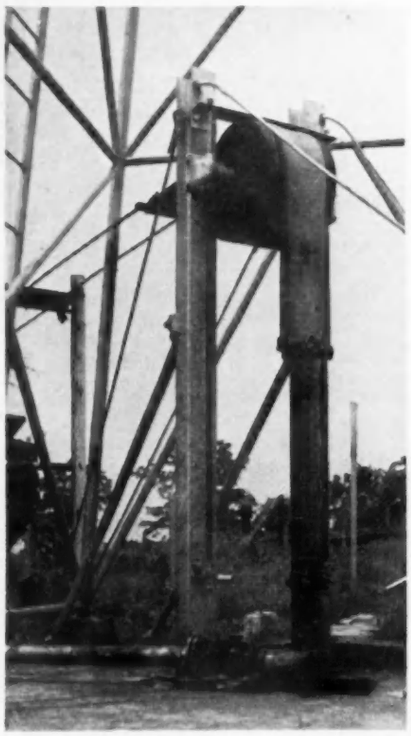
PRACTICAL OPERATING *Hints* FOR

1. WATER SUPPLY

Simple Device Pumps Well From Rod-line



Adjustable frame absorbs belt stretch and maintains straight-line operation of water-well polish rod through box.

STRAIGHT line lift for a shallow well is obtained on one water-well pump by an operator who uses an adjustable pulley and a short section of wide belt to avoid any angularity at the polish rod.

The pulley is mounted on a short shaft, bearing housings of which are drilled and threaded for long adjusting rods, and which also slide over the flanges of the vertical support or frame which provides alignment to the device.

The upper end of the polish rod is attached to a wide-jawed clamp which grips the end of the belt, a similar jaw on the horizontal section of the belt providing anchorage for the wire-line drive from rod line.

Individual adjustment of the adjusting screws enables the operator to level the pulley accurately, preventing any tendency of the belt to climb to the high side, or to impose side strain or eccentric thrust against the stuffing box.

THE practical operating hints for the drilling rig, production man and pipeliner, appearing regularly in these pages, are secured from oil operations everywhere and offer suggestions that will help to improve operating efficiency and safety.

The items give an excellent picture of the remarkable ingenuity being exercised by the operating butions to these features will be divisions of the industry. Contri- paid for at the rate of $5 for each illustrated item accepted. Address contributions to "The Editor, The Oil Weekly, Houston."

2. METERING

Special Mounting Safeguards Meter Unit

TO PROTECT the test meter from road shocks and possible impairment of delicate bearings and accurate adjustment, one company makes a practice of mounting the measuring units in fittings especially designed to protect them.

A shallow rectangular pan serves as base for the meter, it being lined with a thick pad of sponge rubber, formed to the dimensions of the pan. At each corner of the pan is welded a stub hook, similar matching hooks being attached to brackets carried at the top of the meter case.

Between each pair of hooks is stretched a helical spring, similar to those used on screen doors, the springs being extended sufficiently as they are hooked in place to put the rubber cushion under compression, and to hold the meter firmly in place.

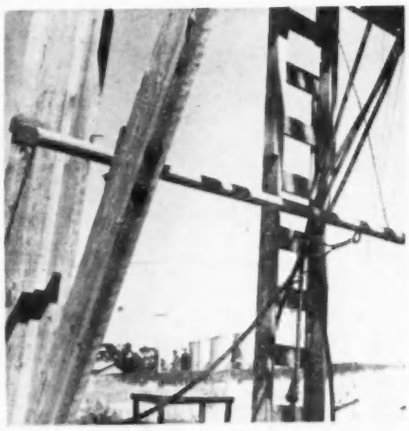
Thus mounted and tied down, the meter is protected against road hazards and truck vibrations, retaining its calibrated accuracy even after traversing difficult field roads to required test sites.

Spring-loaded hold-down snubs highway pound and protects calibrated meter against possible change while in use.

3. SERVICING

Built-in Retainer Line Care Fosters

A HOLDBACK arm for wire lines left strung up in the crown block of the derrick retained at the well for servicing can be made and attached either to steel or wooden derrick structures, and in either case will support the line and provide clear working space around the well head.



Proper clearance for well-head equipment is insured when servicing lines are kept behind long arm of simple hold-back.

A section of 2-inch pipe is fitted with an angle extension of flat strap steel so that the anchored end of the pipe will extend two feet outside the first brace of the derrick.

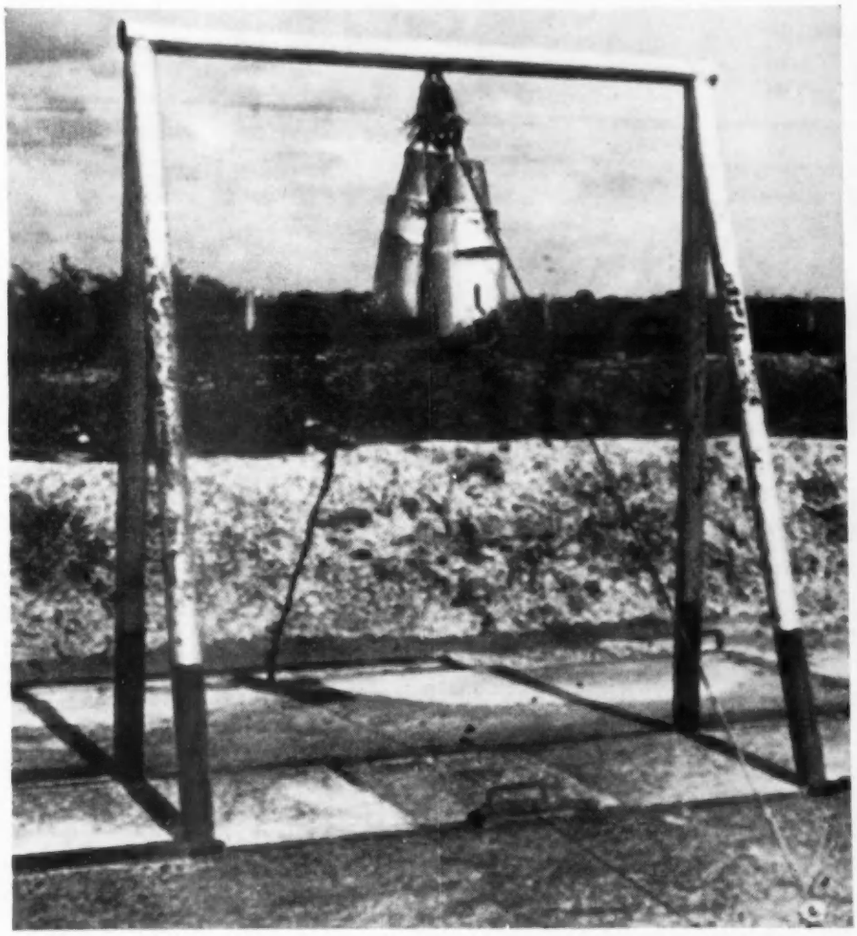
The arm itself is then carried in a U-bolt of proper size on the brace, the size of bolt being dependent upon the brace to be used. The end of the strap section is fastened to the derrick leg with a lag screw if the member be of wood, or with a bolt on steel structures.

The outer end of the arm is fitted with one or more free rings, which may be used to tie the end back after the lines have been slipped over the holdback, and also to attach a supporting guy to relieve the pipe arm bracket of the entire weight of the restrained lines.

THE PRODUCTION MAN

4. SETTING

Underground Hook-up Protects Exposed Unit



Steel covers, counterbalanced by weights from frame spanning the cellar, enclose Christmas tree and insure suppression of spray in case of pipe rupture or leakage threatening nearby trackage.

IN a South Texas oil field bisected by a railroad which passes near producing wells, one operator protects both well and trains from damage by digging cellar for Christmas tree below ground level. Cellar is covered at all times, and is accessible to workers through two large trap doors which are lifted when necessary to enter cellar for manipulating, repairing, or adjusting well head equipment.

A covering 10 feet square and made of heavy steel plate is placed across top of the cellar. A center strip of steel plate 18 inches wide forms a permanent or stationary base, while sturdy hinges are welded on each side to support trap doors. The doors are 3 feet wide and extend the length of the pit. Handles are welded on free edges of doors to permit easy lifting.

On the central steel plate, a mast made of 2-inch pipe is erected for supporting counterbalances. The mast consists of two pairs of legs, one at each end, with a spread of 18 inches and leaning inward to meet at the top, while a cross bar 4 feet long joins the tops, the structure resembling a saw-horse 6 feet tall. All pipe junctions are welded.

From center of the horizontal member, a hook is suspended and a small block attached. A steel line runs through the pulley and is fastened to swinging edges of the doors while to the other ends of the cables counterbalances are bound. Lifting the heavy doors is facilitated by the weights and doors are held open by leaning them against the frame. Both doors may be opened simultaneously. A low firewall is built around the structure to prevent spread of oil in event of equipment failure, shielding the railroad right-of-way of fire hazard.

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Delivered east of the Rockies

Model shown is Type 500-S single ratchet unit, operating off walking beam. Includes: ¼" line check valve—heavy gauge welded 4-gallon container. Pressures up to 5000 lbs. See page 2301 of Composite Catalog, or write for bulletin describing complete line.

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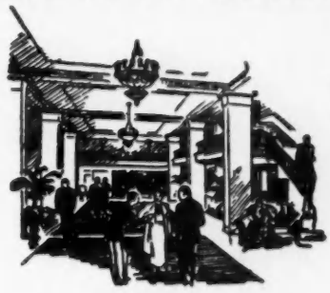

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555 Rooms with Baths from $2.50

"Famous for Good Food from Coast-to-Coast"

Wanted urgently:

STEEL SCRAP

Shortage of steel scrap is threatening the war-production program.

If ships, planes, tanks and guns are to be produced in the volume needed to win the war, the country's steel-making facilities must operate at full capacity. But the plain truth is that the steel scrap to support continued capacity operations is not available, and not in sight.

United Effort Will Do the Job

Thanks to the construction of new blast furnaces, the deficiency is being partly made up by using more pig iron in steel-making. But tremendous quantities of additional scrap must be found within the crucial next few months.

Actually, many thousands of tons of steel scrap are potentially available *if only they can be gathered in.* This scrap, needed so urgently in the war effort, is scattered through the industrial plants, mines and railways, the farms and the homes of the nation. The problem is to collect it and get it moving to the steel mills. Everyone must help. If everyone will, there will be scrap to meet the needs of the war-production program.

Make a checkup in your plant or warehouse, or any other property you own or manage, and in your home.

Have any odds and ends of steel or iron that may be lying around collected. If you have any obsolete or idle equipment, machinery, or parts—anything that's made of iron or steel and isn't really needed—junk it, and get the scrap moving toward the steel mills.

How to Put Your Scrap to Work

Some iron or steel now lying rusting and forgotten around your property may help to save the lives of Americans in the battle areas. Gather up every possible bit of iron and steel scrap. Sell it to a local junk dealer, or get in touch with your local scrap salvage committee. Put your scrap to work for your country. It's needed, now!

BETHLEHEM STEEL COMPANY

BETHLEHEM STEEL

The Week's News

September Production Will Be Close to OPC Figure

Actual production of crude oil in September likely will be close to OPC's enlarged recommendation. In the 10 flush producing states, scheduled or indicated production will be 32,935 barrels, or 0.8 percent, larger than the coordinator's quota, but when it is considered that several of them probably will not produce their allotments it appears that actual recovery will be near the volume recommended by OPC.

Consequently, production in September is expected to be slightly larger than the production rates that existed in August.

Texas has fixed a state allowable of 1,430,363 barrels daily, which is 32,563 barrels, or 2.3 percent larger than OPC's quota. However, the state consistently underproduces its allowable, and consequently is expected to produce about 1,353,300 barrels daily, or 44,391 barrels less than the 1,397,800 barrels recommended by OPC.

California's allowable was fixed at the OPC level, and represents an increase of 23,800 barrels daily in order to provide additional fuel oil.

Kansas allowable was set at 291,900 barrels daily, an all-time high. This represents a 10,000-barrel increase over August, and is 6900 barrels higher than OPC recommended.

Michigan continued to stay below the OPC level, setting a state figure of 63,033 barrels, while OPC had suggested 66,700 barrels. Arkansas will not produce the OPC recommendation. It fixed allowables at 73,339 barrels, near recent actual output, in contrast with an OPC recommendation of 82,900 barrels. Oklahoma will try to produce almost the same amount it tried to recover in August, but which it failed to do by 35,000 barrels daily.

Unprorated Illinois will continue to under produce the OPC recommendation while similarly uncurtailed Mississippi will exceed OPC's quota. In barrelage, the two states may just about offset the difference between the indicated individual rate and recommendations.

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Texas Gas Allowables

Allowable for sour gas production from Panhandle has been fixed by the Texas Railroad Commission at 653,401,000 cubic feet daily during September.

The allowable for production of sweet natural gas in the Rodessa field has been set at 53,861,000 cubic feet daily during September.

States Fix Allowables Near OPC September Recommendations

(Barrels daily of crude oil, condensate, and natural gasoline)

STATE	Recommendation of Petroleum Coordinator for August	Recommendation of Petroleum Coordinator for September	State Allowable Beginning of September	Difference September Allowable from Recommendation	Percent Difference September Allowable from Recommendation
Arkansas	81,600	82,900	73,339	— 9,561	— 11.5
California	767,200	791,500	791,500[1]	.....	.....
Kansas	281,900	285,000	291,900	+ 6,900	+ 0.2
Louisiana	332,600	334,800	334,800	.....	.....
Michigan	66,800	66,700	63,033[2]	— 3,667	— 5.4
New Mexico	97,300	98,100	98,100	.....	.....
Oklahoma	415,500	415,300	415,300	.....	.....
Texas	1,396,700	1,397,800	1,430,363[3]	+ 32,563	+ 2.3
Total 8 Prorated States	3,439,600	3,472,100	3,498,335	+ 26,235	+ 0.7
Illinois	289,300	289,200	269,850[4]	— 19,350	— 6.6
Mississippi	50,000	50,200	76,250[4]	+ 26,050	+ 51.8
Total 10 Flush Production States	3,778,900	3,811,500	3,844,435	+ 32,935	+ 0.8
Other States	259,600	255,000	.....	.....	.....
Total United States	4,038,500	4,066,500	.....	.....	.....

[1] Distributed to fields by Conservation Committee of California Oil Producers.
[2] No state allowable set for September. Estimated production 63,033 barrels.
[3] Texas fields in general will be shut down on September 5, 6, 12, 13, 19, 20, 26, 27 and 30, but the number varies in different fields.
[4] State not prorated, and figures here shown represents actual daily average production in 4 weeks ended August 29.

East Texas Disposal Unit Completes Organization

With final organization plans completed, the $2,000,000 East Texas Salt Water Disposal Corporation, a nonprofit concern financed by operators of the East Texas field, has elected permanent officers and will begin active work on its big salt-water-disposal project as soon as possible.

Bryan W. Payne, independent operator who has served as temporary president of the group while it was being formed, has been elected president. W. S. Morris, Tyler, has resigned as field chairman of the East Texas Engineering Association to become vice president and general manager. J. H. Moyar, Stanolind Oil & Gas Company, Fort Worth, will be secretary-treasurer.

The executive committee will be composed of Payne and Moyar, in addition to the following: David Frame, Humble Oil & Refining Company, Houston; John G. Pew, Sun Oil Company, Dallas; Joe Zeppa, Delta Drilling Company, Tyler, and E. H. Blum, The Atlantic Refining Company, Dallas.

Directors, other than those on the executive committee, include: J. W. Jordon, Sinclair Prairie, Tulsa; M. Albertson, Shell, Houston; George L. Nye, Tide Water Associated, Houston; Don R. Gladney, Magnolia, Dallas; J. J. Frommer, Ohio Oil, Shreveport; C. W. Hughes, Arkansas Fuel, Shreveport; L. G. Hughes, Texas Company, New Orleans; Ralph B. Shank, Hunt Oil, Dallas; F. A. Lawrence, Cities Service, Gladewater; C. V. Millikan, Amerada, Tulsa; C. L. McMahon, independent, Tulsa; C. R. Starnes, independent, Gladewater; Charles P. McGaha, independent, Wichita Falls; W. C. Stroube, independent, Corsicana, and M. E. Wilson, General American, Dallas.

California Protective Activities Consolidated

Coordination and consolidation of anti-sabotage and protective work of the Oil Industry Protection Committee with the Facility Security Division of the Office of Petroleum Coordinator has been completed with the affiliation of two members of the committee with the coordinator's office, A. C. Rubel, vice president of Union Oil Company of California and chairman of the Oil Industry Protection Committee for California, has announced.

"A. A. Jergins, vice chairman of Oil Industry Protection Committee, has been appointed director at large of the division, and Geo. F. Prussing, executive secretary, Oil Industry Protection Committee, has been appointed director of District 5. These two men will continue their affiliation with the protection group as well, thereby insuring complete coordination of all protective activities within the industry," Rubel said.

Duty of the Facility Security Division of OPC is to insure protection of all oil industry facilities not specifically assigned to the Army. It is also aligned with OCD, whose broad responsibility is to insure proper precautions and protection for all facilities, both industrial

and civilian, not specifically assigned to the Army.

Director of the OPC Facility Division is W. D. Mason, who was with Standard Oil Company of California for 22-years prior to joining Sun Oil Company, from which company he is now on leave.

Michigan Court Rules On Royalty Division

Without passing directly in relation to the lessee on the royalty apportionment clause, Federal Judge Arthur Tuttle, at Bay City, Michigan, ruled that the clause does not prohibit the fee owner from selling royalty as he sees fit as long as it does not add to the obligation of the lessee.

The ruling was handed down when Simrall Corporation, a purchaser, brought suit as an inter-pleader against Mrs. Flora Coyne, fee owner, and 100 other royalty owner defendants in a 345-acre lease in the Freeman field, Clare County. Simrall set out that Mrs. Coyne had sold various amounts of royalty under two particular 40-acre leases, which subsequent drilling proved to be the only productive part of the 345 acres. The original lease, written by Carter Oil Company in 1937, contained the so-called royalty apportionment restriction or that all of the land covered by the lease would be considered as a single unit and not dividable under separate portions of the entire property.

Simrall charged that the clause was not understood "or discovered" until $14,900 in royalties had been paid out by the company.

The court did not rule on the clause directly as the lessee was not a party to the suit. However, the ruling, in favor of Simrall, set out that the clause did not prohibit the fee owner from making disposition of royalty in any manner as long as such a disposition did not add to or increase the burden on the part of the lessor.

The royalty apportionment clause does not appear in the most commonly used lease form in Michigan, with many attorneys holding that under the Michigan laws, it is contradictory to the "binding parts of the contract."

Uruguay Seeking Relief From Tanker Shortage

Uruguay is faced with a critical oil shortage and is seeking means in Washington of securing expanded transportation in order that imports can be increased. Carlos R. Vegh Garzon, general manager of the Uruguayan National Administration of Fuels, Alcohol and Cement, has been discussing this subject with Washington officials.

Vegh Garzon said in New York last week that current consumption of oil products (chiefly fuel oil and gasoline) is less than half the 1941 consumption. Despite severe rationing, essential needs are not being met. Uruguay has been importing wood from Argentina but in recent months the supply has decreased because of Argentina's growing need for wood as a substitute fuel. About 20,000 tons per month of corn is being burned in electric power plants in Uruguay, and some gas fuel is being manufactured from maize. Sources of Uruguay's oil imports are chiefly Venezuela and Ecuador, but because of tanker transportation shortages, the supply has been cut in recent months. The Uruguayan government has been trying to build a new refining unit at its present plant near Montevideo but cannot complete this project because of lack of materials.

Uruguay has no domestic oil production. Several wells were drilled two years ago without success. Geological studies indicate, said Vegh Garzon, that there is little prospect of developing oil production in the country.

Vegh Garzon was in New York last week conferring with oil company officials on the Uruguayan situation. He was scheduled to return to Washington for further conferences before leaving for South America.

Venezuelan Economy Upset by War Curtailment

Curtailed oil production occasioned by loss of transportation capacity has resulted in appreciable unemployment in the Venezuelan oil industry and has affected national income to the point where Venezuela has incurred a national debt for the first time in many years. The government recently floated several loans and adopted an income tax to offset reduced income. Last year, the value of exported petroleum products was 94.2 percent of all exports. Although current data of the petroleum industry are no longer available, reports that oil companies have had to curtail employment this year, and the fact that they and the government are financing three farm colonies for discharging workers indicate the shortage of oil tankers has created a considerable economic problem.

Creole Petroleum Corporation reports that in the 6 months ending June 30 the company's subsidiary, Standard Oil Company of Venezuela, averaged a daily production of 81,672 barrels, compared with a daily average of 93,870 barrels in the same period of 1941. This is a production drop of 13 percent. Production for the full year 1941 averaged 99,246 barrels per day. The company's refinery at Caripito charged an average of 29,286 barrels daily in the 1942 first half as against 37,410 barrels in the same period of 1941, a decrease of 22 percent.

Phillips Petroleum Adopts Longer Working Schedule

Employes of Phillips Petroleum Company, with some exceptions, went on longer working schedules September 1.

Every employe now on the pay roll is badly needed, the company announced. The new working hours are made necessary by the company's increasing demands for manpower to operate new war production plants and to fill jobs left vacant by a large number of employes entering military services.

All employes subject to the Fair Labor Standards Act and who are non-exempt will receive time and one half for all hours worked in excess of 40 hours per week. With respect to other employes who may be required to work longer hours than they are at present working, certain adjustments will be made.

In making this announcement, Frank Phillips, chairman, and K. S. Adams, president, pointed out that only by employes working longer hours can shortages of manpower be overcome. This new working schedule affords every employe a greater opportunity to help win the war, the company said.

Texas Mid-Continent Meeting Only One Day

Instead of the usual three-day convention held each year by the Texas Mid-Continent Oil and Gas Association, this year's annual meeting will be confined to one day's streamlined, war meeting, devoted to serious discussion of the prob'ems of the Texas oil industry and its place in the national war effort.

The annual meeting will be held in Dallas, October 9. The business sessions will be followed by an evening dinner meeting, for which a prominent speaker is to be announced.

Anticipating that many will stay over for the Saturday afternoon football game between Oklahoma University and Southern Methodist University, it has been decided to devote Saturday morning to committee meetings and post convention activities.

Election of officers will be held on Friday and association activities for next year will be outlined for discussion by George Sawtelle, president of the association. Distinguished service awards will be given, carrying on the custom which has been one of the features of annual meetings in the past.

South American Institute Has International Council

Establishment of its International Permanent Council to coordinate activities of the national sections is announced by the South American Petroleum Institute. Members were named in Montevideo, Uruguay, the temporary seat of the institute.

Officials of the council are: president, Carlos R. Vegh Garzon, general manager of Uruguayan National Administration of Fuels, Alcohol and Cement; vice president, Enrique P. Canepa, technical manager of Argentine Y.P.F.; secretary (honorary), Juan Pinilla, representative of Bolivian Y.P.F.; vocal, Artidoro Alvarado Garrido, director of Peruvian Ministry of Mines and Petroleum; vocal, Hector Marchant Blanlot, manager of Llano de Maipo Railway.

Vegh Garzon, at present in the United States, will soon visit Colombia and Ecuador with expectation of accomplishing the organization of national sections in those countries. Such sections exist in Argentina, Chile, Peru, Uruguay and Bolivia.

William R. Boyd, Jr., president of the American Petroleum Institute, has been made honorary member of the South American Petroleum Institute.

No Oil for Repairs— No Oil Trucks on Roads

Oil trucks may be banned from hard-surfaced roads in the Province of Alberta. The matter is now receiving the consideration of the provincial authorities. The minister of public works stated at Edmonton, recently, that due to the lack of oil for highway maintenance, some action would undoubtedly be necessary as the present oil trucks with their frequent passage and heavy weight were causing extensive damage to roads throughout Alberta, and particularly in the oil districts.

Refined Stocks, Including Gasoline, Show Gains

Material improvement in distillate fuel stocks, as exceptionally large volumes went to storage, featured the industry's inventory trend during the week ended August 29. However, this encouraging development was offset by the climb of gasoline storage to above a year ago levels as more motor fuel was manufactured than consumed for the first time since late last winter.

Distillate or light-fuel stocks increased 1,644,000 barrels during the week in contrast with a 375,000 barrel gain during the preceding week, and now total 42,060,000 barrels. Thus stocks of this product have risen 4½ million barrels during the past month. Although this will go a long way toward meeting winter heating needs, the stocks are still 5,029,000 barrels, or 10.6 percent under the level at this period of 1941. However, this is a substantial improvement from a week ago, when they were 12.2 percent, or 5,665,000 barrels, under a year ago. Fortunately, most of the increase, 1,433,000 barrels, took place in the combined East Coast-Texas-Louisiana-Arkansas area. However, it is impossible because of war censorship to determine how much of this actually reached the Atlantic seaboard. Minor increases took place in all other districts, except the Appalachian region where inventories remained stationary.

For the first time since March 16 gasoline stocks registered an increase. The addition of 388,000 barrels to gasoline inventories during the week, coupled with smaller reductions in preceding weeks than occurred in the corresponding period of 1941, resulted in motor-fuel stocks going above the year-ago level for the first time since early June. Gasoline in storage now totals 80,831,000 barrels, which is 437,000 barrels, or 0.5 percent, more than a year ago. Although refinery runs were down slightly last week, the tendency during August was for them to increase, and consequently the production of gasoline has grown also. This is responsible for the sudden change in the gasoline situation, which now appears unfavorable because of prospects for continued reductions in consumption in the face of enlarged motor fuel output as refining activities are boosted to meet rising fuel-oil and military requirements.

Significantly, the increase in gasoline production from 11,255,000 barrels per week during the preceding 7 days to 11,300,000 barrels last week occurred although daily average crude runs to stills dipped 26,000 barrels.

Residual fuel stocks showed little change, increasing but 27,000 barrels to 78,034,000 barrels, at which level they were 15,756,000 barrels or 16.7 percent under a year ago. A week ago, when 585,000 barrels of residual went to storage, heavy-oil stocks were 14,989,000 barrels or 16.1 percent below 1941. Thus, despite their small gain, residual stocks failed to keep pace with the year-ago rate. The only area to show an increase in heavy-fuel stocks was the East Coast-Texas-Louisiana-Arkansas district, which was up 510,000 barrels to 18,794,000 barrels. California, where the fuel-oil situation is bad, dropped 341,000 barrels to 53,298,000 barrels.

California Seeking More Fuel Oil Output

A new attack on the problem of securing additional fuel-oil production in California is being made jointly by the Conservation Committee of California Oil Producers, the Production Committee for District No. 5, and the District No. 5 Office of the Petroleum Coordinator.

These three groups plan to determine the amount of artificial lifting equipment in the hands of the industry and available for installation on heavy-oil wells, the data then to be presented to OPC in Washington as a basis for amendment of M-68, which regulates the use of such equipment.

Information sought is the total number of pumping units now in inventory, the number of installed but idle pumping units which could be transferred to more prolific wells, and the number of make-shift units which could be assembled from material on hand.

Data as to the number of units which could be transferred is needed as a basis for amendment of the provision

Petroleum Production in the United States

(Estimates compiled by The Oil Weekly. All figures indicate daily averages, in barrels)

STATE OR DISTRICT	[1]OPC Allocation in September	PRODUCTION IN WEEK ENDED Aug. 29	Sept. 5
Arkansas	82,900	72,150	71,100
California	791,500	744,900	712,600
Long Beach		35,600	35,200
Midway-Sunset		57,200	55,300
Kettleman Hills		38,400	35,700
Wilmington		94,400	94,500
Rest of State		519,300	491,900
Colorado	7,000	6,585	6,800
Illinois	289,200	268,450	268,850
Salem		42,100	41,800
Louden		46,650	44,650
Other New Pools		167,750	170,200
Old Pools		11,950	12,150
Indiana	19,300	18,250	16,900
Kansas	285,000	290,050	245,850
Kentucky	14,000	11,950	12,200
Louisiana	334,800	337,800	329,600
North Louisiana		97,000	97,550
South Louisiana		240,800	232,050
Michigan	66,700	63,350	61,900
Mississippi	50,200	76,700	72,350
Missouri		130	130
Montana	22,800	23,300	23,800
Nebraska	3,900	3,700	3,300
New Mexico	98,100	99,600	96,050
New York	15,200	12,950	13,200
Ohio	11,200	9,350	9,600
Oklahoma	415,300	378,600	379,300
Oklahoma City		69,300	74,700
Seminole Area		92,450	89,950
Rest of State		216,850	215,550
Pennsylvania	52,300	53,000	51,600
Tennessee		30	30
Texas	[2]1,397,800	1,413,050	1,209,050
Upper Gulf Coast		310,050	294,250
East Texas Field		362,850	290,850
Rest of Eastern Texas		87,250	79,850
Lower Gulf Coast		122,650	96,300
Southwest Texas		59,250	45,150
South Central Texas		18,500	17,050
West Texas		226,900	180,300
North Texas		136,550	130,350
Panhandle		89,050	74,950
Utah		15	15
West Virginia	16,600	9,900	10,000
Wyoming	93,400	91,250	91,550
Total United States	4,066,500	3,985,060	3,685,725

[1] Production rates recommended for states by Office of Petroleum Coordinator, on basis of Bureau of Mines forecast of the nation's daily average requirements for domestic crude during month. State conservation authorities except Texas Railroad Commission have prescribed allowables calculated to hold actual production within OPC regulations. (Details on state allowables published in this issue of The Oil Weekly.)

[2] Generally, Texas fields will be shut down on September 5, 6, 12, 13, 19, 20, 26, 27 and 30, but the number varies in different fields.

Trends of Operations and Changes in Stocks

Figures on crude stocks are from Bureau of Mines weekly reports; all others from American Petroleum Institute weekly reports, which are estimates on Bureau of Mines basis.

ITEM	Crude Oil Prod. Bbls. Day (Add 000)	Week Ended	Runs to Stills Bbls. Day (Add 000)	Week Ended	Crude Stocks Bbls. (Add 000)	Week Ended	Gasoline Stocks Bbls. (Add 000)	Week Ended	Gas Oil & Distillate Stocks Bbls. (Add 000)	Week Ended	Residual Fuel Oil Stocks Bbls. (Add 000)	Week Ended
Highs:												
1939	3,910	8- 5	3,650	10-21	278,607	5-26	87,769	4-22	39,562	10-28	116,237	8-26
1940	3,890	3-16	3,690	6-22	265,865	8-31	102,817	4-20	49,051	10-19	109,135	9-14
1941	4,337	11-22	[1]4,120	10-18	266,187	3-29	99,727	3-29	[1]54,983	11-15	102,448	1- 4
1942	[1]4,337	2- 7	3,961	1- 3	263,208	3-28	[1]107,229	3-14	49,357	1- 3	95,857	1- 3
Lows:												
1939	[3]1,601	8-26	3,125	2-18	[2]229,127	10-21	71,152	10- 7	20,722	4-15	105,397	4- 8
1940	3,335	11-30	3,370	1- 6	237,339	1-27	79,847	11- 9	23,551	4- 6	102,344	2-10
1941	3,364	1-11	3,490	1-18	240,399	11-15	80,870	10- 4	28,381	4-12	90,914	7-12
1942	3,297	7- 4	3,393	5-23	244,364	1-10	80,443	8-22	29,240	4-25	76,903	7- 4
Trends in 1942 (Week Ended):												
Jan. 3	4,038	.....	3,961	.....	244,440	.....	92,987	.....	49,357	.....	95,857	.....
Jan. 31	3,871	.....	3,848	.....	250,740	.....	97,810	.....	40,674	.....	91,189	.....
Feb. 28	4,016	.....	3,675	.....	259,373	.....	105,635	.....	34,547	.....	88,285	.....
Mar. 28	3,820	.....	3,667	.....	263,208	.....	105,624	.....	31,756	.....	83,045	.....
April 25	3,581	.....	3,506	.....	257,073	.....	102,897	.....	29,240	.....	81,107	.....
May 30	3,877	.....	3,522	.....	255,023	.....	95,355	.....	31,384	.....	79,628	.....
June 27	3,719	.....	3,581	.....	253,364	.....	88,396	.....	32,851	.....	77,304	.....
July 25	3,691	.....	3,658	.....	249,262	.....	82,281	.....	35,966	.....	77,816	.....
August 1	3,383	.....	3,672	.....	248,336	.....	81,324	.....	37,530	.....	78,383	.....
August 8	3,970	.....	3,561	.....	246,975	.....	81,277	.....	39,024	.....	78,575	.....
August 15	3,893	.....	3,711	.....	246,433	.....	80,708	.....	40,041	.....	77,422	.....
August 22	3,972	.....	3,723	.....	246,307	.....	80,443	.....	40,416	.....	78,007	.....
August 29, 1942	**3,964**	.....	**3,697**	.....	.....	.....	**80,831**	.....	**42,060**	.....	**78,034**	.....
August 30, 1941	4,005	.....	4,133	.....	[4]248,910	.....	80,394	.....	47,089	.....	93,790	.....
Change:												
In week	—8	.....	—26	.....	—126	.....	+388	.....	+1,644	.....	+27	.....
In year	—41	.....	—436	.....	—2,603	.....	+437	.....	—5,029	.....	—15,756	.....
In year	—1.0%	.....	—10.5%	.....	—1.0%	.....	+0.5%	.....	—10.6%	.....	—16.7%	.....

[1] All time peak. [2] Lowest since April, 1922. [3] Lowest since October, 1922, due to shutdown of six Mid-Continent States. [4] Stocks, August 23, 1941.

of M-68 which prohibits installation or use of any artificial lifting equipment on a well whose drainage area is less than 10 acres. This provision tends to freeze pumping units to the particular wells on which they were installed on the effective date of M-68, regardless of whether the wells have since become nonproductive, and prohibits their use on other wells which may have since ceased to flow but would produce considerable quantities of oil on the pump.

The survey will be carried out by fields through field committees and their chairmen, which make up the conservation committee organization, each field committee to determine the amount of equipment in the hands of independent operators, with the major companies reporting directly to the conservation committee subcommittee in charge of the program. Data thus secured will be compiled and forwarded to Washington for recommendation to the War Production Board.

Need for immediate action is indicated by the course of fuel-oil storage in California during the first seven months of the year, when the decline was more than 10,000,000 barrels. Current daily withdrawals are approximately 30,000 barrels, and utilization has increased from 281,000 barrels per day during the first six months of 1941 to 342,000 barrels daily during the first six months of 1942, because of the increase in military and war industry use.

West Texas Pipe Line Proration Lifted

Pipe-line proration in West Texas and Southeast New Mexico was terminated September 1 when Humble Oil & Refining Company resumed 100-percent purchases after restricting its takings to 55 percent of the allowable throughout August. However, fields classed as sources of essential war products were not curtailed. This Permian Basin district has been subjected to reduced runs by one or more buyers at intervals since February 10.

Crude Oil Production Shows Sharp Drop

Crude oil production in the United States dropped sharply in the week ending September 5. Production average for the seven-day period was 3,685,725 barrels daily as compared with 3,985,060 barrels in the preceding week.

The biggest cause of the drop in output was three shut-down days in Texas fields. Total for the state was 1,209,050 barrels daily as against 1,413,050 barrels for the week ending August 29. The daily allocation for Texas as set by OPC was 1,397,800 barrels daily.

For particular areas that showed declines, East Texas dropped from 362,850 barrels daily to 290,850 barrels. Fields in Oklahoma and Illinois maintained their previous ratio of output while Kansas dropped from 290,050 barrels to 245,850 barrels daily.

Total production was well below the federal figure, set at 4,066,500 barrels daily.

Woman High Bidder On Taber Leases

A Calgary woman, Mrs. Lila Hunter, sprang a surprise at the provincial land office there when she outbid Standard Oil of British Columbia and Nassau Explorations, Ltd., for government acreage in the new Taber oil field.

Six sealed bids for oil rights on 240 acres in the center of Taber field were handed in to land office officials.

When they were opened, it was found that Mrs. Hunter had bid $1255, while the joint bid of Standard Oil of B. C. and Nassau Explorations, Ltd., was $1,251.55. Thus Mrs. Hunter outbid her nearest competitor by $4.55 and got the oil rights.

Standard Oil of B. C. and Nassau Explorations, Ltd., a subsidiary, have taken an active interest in the Taber oil field. One well has been completed and is regarded as an excellent crude producer, while a second Standard well is drilling. The completed well will go on a pumping test shortly.

Unsuccessful bidders in addition to Standard of B. C. were Ace Royalties, $251; Jacob Laver, $75; F. Armour, $160; and H. M. Mack, $151.

Wholesale Prices of Refined Products in Principal Markets

REFINED GASOLINE	Current Range (Cents a gal.)		Changes from Month Ago	
Oklahoma Refineries:				
60 Octane and Under	5⅛	5¼	+⅛	...
63-66 Octane	5½	5⅝	+⅛	...
72-74 Octane	5⅞	6	+⅛	...
80-82 Octane, Ethyl	6¾	6⅞	+⅛	+⅛
Mid-Western Tank Car:				
60 Octane and Under	5⅛	5¼	+⅛	...
63-66 Octane	5½	5⅝	+⅛	...
72-74 Octane	5⅞	6	+⅛	...
80-82 Octane, Ethyl	6¾	7⅛	...	+⅛
New York Harbor:				
68-70 Octane	9¼	9¼	—2½	—2½
72-74 Octane	9¼	10¼	—2½	—2½
Min. 80 Octane, '39 Research	9⅞	9⅞	—2½	—2½
Gulf Coast:				
60 Octane unleaded	5	5	...	...
65 Octane unleaded	5¼	5¾	...	...
68 Octane unleaded	5¼	5½	...	...
70 Octane unleaded	5¼	5¾	...	...
72-74 Octane leaded	5⅛	6	...	...
Min. 80 Octane, '39 Research	5½	5½	...	...
NATURAL GASOLINE				
Grade 26-70:				
F.O.B. Group 3	3⅝	3⅝	+⅝	+⅝
F.O.B. Br'kenr'ge, Tex.	3¼	3¼	+⅝	+⅝
KEROSINE				
Oklahoma Refineries:				
41-43 water white	4⅝	4½	...	...
42-44 water white	4½	4⅝	...	...
Mid-Western Tank Car:				
41-43 water white	4⅝	4⅝	...	...
42-44 water white	4½	4½	...	...
New York Harbor	6⅞	6⅞	—⅞	—⅞
Gulf Coast:				
41-43 water white	3⅞	4⅝	...	...
RANGE OIL				
At Oklahoma Refineries	4	4⅞	...	+½
In Mid-Western Market Group 3, basis	4	4⅛	...	...
LIGHT FUEL OILS				
Oklahoma Refineries:				
No. 1 prime white	3⅞	4¼	...	...
No. 1 straw	3⅞	4	...	...
No. 2 straw	3⅝	4⅛	...	...
No. 3	3½	3½	...	...
Mid-Western Tank Car:				
No. 1 prime white	3⅞	4⅛	...	...
No. 2 straw	3⅝	3⅝	...	...
No. 3	3½	3½	...	...
New York Harbor:				
No. 1	6⅞	6⅞	—⅞	—⅞
No. 2	6¾	6¾	—1⅛	—1⅛
No. 3	6¾	6¾	—1⅛	—1⅛
Gulf Coast:				
No. 2	3¾	3⅞	...	...

HEAVY FUELS	Current Range (Per Bbl.)		Changes from Month Ago	
Oklahoma Refineries:				
No. 6	$0.80	$0.90	...	...
14-16 Gravity	.95	.95	...	...
Mid-Western Tank Car:				
No. 5	.85	.85	...	...
No. 6	.80	.85	...	...
New York Harbor:				
No. 5	1.95	2.10	—.15	—.15
No. 6	1.65	1.65	—.15	—.15
BUNKER C FUEL OIL (Per barrel, ships' bunkers)				
Gulf Coast	$0.85	$0.90	...	—.05
New York Harbor	1.65	1.65	—.15	—.15
DIESEL OIL (Per barrel, ships' bunkers)				
Gulf Coast	$1.55	$1.68	...	...
New York Harbor	2.78	2.78	—.46	—.46
LUBRICATING OIL (Cents a gal.)				
Oklahoma Refineries:				
Bright stock (viscosity at 210°):				
200 vis. D, 10-25 pour point	27	27	...	...
150-160 vis. D:				
0-10 pour point	23	23	...	...
10-25 pour point	22½	23	...	...
25-40 pour point	23	23	...	...
150-160 vis. E	22	22	...	..
120 vis. D, 0-10 pour point	22	22	...	...
600 s.r. dark green	8½	8½	...	...
600 s.r. olive green	10	11	...	...
631 s.r.	18½	18½	...	...
Neutral Oils (viscosity at 100°, 0-10 pour point):				
Pale Oils:				
60-85 vis. No. 2 color	8	8	...	...
86-110 vis. No. 2 color	8½	8½	...	...
150 vis. No. 3 color	14½	14½	...	...
180 vis. No. 3 color	15	15	...	...
200 vis. No. 3 color	15	15	...	...
250 vis. No. 3 color	16	16½	...	...
280 vis. No. 3 color	17	17	...	...
300 vis. No. 3 color	18	18	...	...
Red Oils:				
180 vis. No. 5 color	15	15	...	...
200 vis. No. 5 color	15	15	...	...
280 vis. No. 5 color	...	...	...	...
300 vis. No. 5 color	17½	17½	...	...
Western Pennsylvania:				
Cylinder Stocks:				
600 s.r. filtrable	15	15	...	...
650 s.r.	15½	15½	...	...
600 flash	16	16	...	...
630 flash	17	17	...	...

LUBRICATING OIL (Cents a gal.)	Current Range		Changes from Month Ago	
Bright Stock (No. 8 Color, 145-155 vis. at 210°, 540-550 fl.):				
10 pour test	30½	30½	...	...
15 pour test	29½	29½	...	...
25 pour test	25	25	...	...
Viscous Neutrals (No. 3 Color, vis. at 70°):				
200 (180 at 100), 420-425 fl.:				
Zero pour test	40½	40½	...	...
10 pour test	39½	39½	...	...
15 pour test	38½	38½	..	...
25 pour test	30	33	—3	...
150 (143 at 100), 400-405 fl.:				
Zero pour test	38½	38½	...	...
10 pour test	37½	37½	...	...
15 pour test	36½	36½	...	...
25 pour test	28	31	—3	...

CRUDE OIL PRICES UNCHANGED

Schedule of crude oil prices was unchanged during August, remaining as reported in THE OIL WEEKLY of July 6, 1942, pages 47-48.

MAJOR CRUDE OIL PRICE CHANGES

	Penna. Grade	Mid-Cont. (36 Gr.)	Calif. (26 Gr.)
Jan. 1, 1940	Up 25	.....	.....
Feb. 1, 1940	.....	.....	Cut *7
May 22, 1940	Cut 25	.....	.....
June 18, 1940	Cut 25	.....	.....
July 12, 1940	Cut 25	.....	.....
Aug. 28, 1940	Cut 15	.....	.....
Nov. 12, 1940	Up 15	.....	.....
Dec. 17, 1940	Up 15	.....	.....
Jan. 27, 1941	Up 15	.....	.....
April 1, 1941	.....	Up 5	.....
April 23, 1941	Up 10	.....	.....
April 24, 1941	.....	.....	Up *6
May 19, 1941	.....	Up 10	.....
May 21, 1941	Up 15	.....	.....
May 22, 1941	.....	.....	Up *6
June 18, 1941	Up 20	.....	.....
Aug. 14, 1941	Up 23	.....	.....
Aug. 25, 1941	Cut 23	.....	.....
March 26, 1942	Up 25	.....	.....

* Signal Hill 26 gravity.

U. S. Field Operations

Illinois Basin

Wabash County Test Is Prospective Pool Opener

Plug to be drilled at prospective pool opener in Wabash County. Wildcat in Clinton County waiting on cement. St. Clair County test which appeared to be possible pool opener abandoned. Oil-cut mud recovered in drill-stem test at Jefferson County wildcat.

Wabash County: Pete Ravenstein's Wheatley 1, C E½ NE SE 3-1s-13w, due to drill plug on Benoist, topped at 2467 ft, from which 165 ft of oil was recovered in a 30-minute drill-stem test. The site is four miles northwest of Mt. Carmel.

Texas Co.'s Steckler 1, SE SW 8-1s-12w, a wildcat 2½ miles north of Mt. Carmel, is drilling ahead after recovering a show of oil in Biehl sand.

Clinton County: Sohio Producing Co.'s Twiss 1, NE SW NE 23-2n-3w, is waiting on cement with casing set on Trenton at 2960-76 ft. It is eight miles southeast of the St. Jacob pool of Madison County and ½ mile west of Aviston.

St. Clair County: Big Chief Drilling Co.'s Halliday 1, SE NE NW 31-2n-7w, seven miles southwest of the St. Jacob pool, shut down, a probable abandonment. No free oil was recovered when plug was drilled to the Trenton lime at 1923-74 ft.

Another wildcat is starting 2½ miles southwest of the St. Jacob pool, H. H. Weinert's North Estate 1, SW SW NE 5-2n-6w.

Other activity in the county, which until recently was seldom explored, includes Mid-Sun Oil Corp.'s Schneppe Community 1, SW NE 5-1n-8w, 4 miles north of Belleville.

Jefferson County: Oil Carriers, Inc.'s Mace 1, NW NE SE 33-3s-3e, was coring after 110 ft of oil-cut mud was recovered in drill stem-test of Aux Vases at 2730-54 ft. The test is a mile south of the discovery well of the Mt. Vernon field, a holding of Lewis Production Co.

One mile southeast of the Lewis discovery Nash Redwine's Willmore-Wilkerson Community 1, NW SW 27-3s-3e, was coring after recovering 40 ft of drilling mud and no oil in a drill-stem test in Aux Vases at 2741-58 ft.

John Pugh and Shell Oil Co.'s Huff-Nelson 1, SE NE 35-2s-4e, 10 miles east of Mt. Vernon, abandoned at 3175 ft.

Indiana

Knox County: J. E. Bauer staked location for Heldman 1, near center of east 40 acres in Survey 44-2n-10w, five miles southeast of Vincennes.

Spencer County: In the Eureka pool, southeast of Yankeetown, W. W. Dameron and associates are spudding Hall 1, NW NW SW 34-7s-7w, 40-acre location south of the discovery well, Miller & Shiarella's Locker 1, NW SW NW 34-7s-7w, which was completed in the McClosky after acid for an initial of 90 bbls per day. Same operators have located W. H. Jones 1, NW NE SW 34-7s-7w, southeast of the discovery well.

Posey County: Calstar Petroleum Co.'s Scholtz 1, NE NE SW 12-5s-14w, wildcat two miles south of New Harmony, has been abandoned at 3075 ft, with no shows reported; elevation 457 ft, Glen Dean lime 2407 ft.

Kentucky

S. C. Yingling and Fred Capshaw's Rash 1, NE NW SW 13-Q-20, wildcat 2½ miles south of Mt. Vernon, Indiana, is setting casing to test Cypress saturation at 2311-24 ft. Rash 1 was abandoned in March, 1941, when it was drilled by Joe Minton and associates.

Results of Industry's Prospecting Fronts

Arkansas: Miller County well shows distillate.

Mississippi: Wildcat showing.

California: Field extended.

Wyoming: Another sand at Pilot Butte.

Texas Coast: Prospect in Harris; extension in Jackson.

West Texas: Lubbock County wildcatting encouraged. Taylor County wildcat has prolific flow.

North Texas: Two strikes in prospect in Montague County; deeper production in Clay County pool.

East Texas: Chapel Hill extended two miles.

ILLINOIS FIELD COMPLETIONS

Clay County—Pure's Graham Consol. 1, c se sw 34-3n-8e, Cyp 2584-2593 ft, 29 bbls, 2593 ft.

Clinton County—A. J. Schiermann's Hempen 1, ne se ne 17-1n-2w, abnd 1144 ft.

Texas Co.'s P. Gray 3, sw ne sw 35-3n-2w, Ben 1199-1220 ft, 160 bbls, 1220 ft.

Crawford County — William Krohn's Ed Wiman 2, c s½ ne se 19-8n-13w, abnd 1185 ft.

Edwards County—Nelson Dev. & Seaboard's Gadau-Rothrock Comm. 1, ne ne sw 6-1n-14w, McC 3121-25 ft, 15 bbls, 3140 ft.

Gallatin County—Skelly's Schmitt 1, se sw nw 15-8s-9e, Cyp sd 2498-2516 ft, 117 bbls, 2516 ft.

Hamilton County—Ohio's Moore 3, ne se nw 35-6s-5e, AV 3246-54 ft, 224 bbls, 3260 ft.

Texas Co.'s N. F. Hatton 1, nw sw nw 13-6s-6e, abnd 3129 ft.

Texas Co.'s Johnson-Mayberry 1, c se se 11-6s-6e, AV 3064-80 ft, 131 bbls, 3083 ft.

Texas Co.'s Wilson 1, c w½ sw sw 27-6s-6e, AV 3074-3111 ft, 77 bbls, 3112 ft.

Jasper County—F. Jablonski's Sterchi 1, c s½ se se 31-5n-11e, McC 3045-48 ft, 50 bbls, 3065 ft.

C. R. Craft's Reis 1, c e½ sw ne 6-5n-14w, McC 2850-57 and 2862-66 ft, 76 bbls, 2866 ft.

Pure's Miles 3, c e½ se nw 18-5n-10e, Rosi 2847-2852 ft, McC 2854-57 ft and 2882-85 ft, 461 bbls, 2897 ft.

Jefferson County—Duncan & Oberling's C. Reagan 1, c ne sw 25-2s-1e, Bethel 2011-21 ft, 77 bbls, 2021 ft.

Lewis Prod. Co.'s State Game Reserve 2, sw nw ne 28-3s-3e, AV 2732-58 ft, 74 bbls, 2760 ft.

Macoupin County—R. G. Whipple's H. C. Rhoads 3, ne sw sw 35-9n-8w, abnd 390 ft.

Marion County—Markham Drlg. Co.'s Edwards 2, nw ne ne 17-1n-1e, abnd 1802 ft.

Richland County—Pure's Engledown 1, c sw nw 23-4n-9e, abnd 3015 ft.

Pure's Lucas Consol. 1, c nw ne 25-4n-9e, pay 2578-2585 ft, 17 bbls, 2585 ft.

Texas Co.'s Boatmann Comm. 1, nw nw se 27-4n-10e, McC 3060-74 ft, 376 bbls, 3185 ft.

Wabash County—Magnolia's Payne 1, sw ne se 8-1n-12w, Biehl 1510-50 ft, 109 bbls, 1550 ft.

Hayes Drlg. Co. et al's Neikirk 1, c s½ ne nw 9-1n-13w, pay 2717-21 ft, 2723-35 ft, and 2746-61 ft, 40 bbls, 2765 ft.

Longhorn Oil Corp.'s Halm 34, 125 ft w

U. S. Drilling Operations in Week Ended September 5, 1942

STATE	ALL WELLS COMPLETED — THIS WEEK Total	Oil	Gas	Dry	*Miscel.	†Total 1942	Total this Date 1941	WILDCATS COMPLETED‡ — THIS WEEK Total	Oil	Gas	Dry	Distillate	Total 1942
Alabama						3	1						3
Arizona						2							2
Arkansas	5	2		3		89	113	1			1		11
California	11	9		2		533	780	2			2		75
Colorado						8	13						
Georgia						2	1						2
Illinois	60	30		23	7	1,434	2,561	16	2		14		409
Indiana	12	2		10		269	373	5	1		4		67
Iowa							5						
Kansas	30	26		4		1,118	1,544						248
Kentucky	4	3		1		99	211	1	1				25
Louisiana	21	16	3	2		689	980	1			1		107
Michigan	13	4	2	7		473	552	6			6		121
Mississippi	6	1		5		82	127	5			5		27
Missouri						21	41						
Montana	5	5				142	139						
Nebraska						27	58						13
New Mexico	4	2		2		276	251	2			2		33
New York	28	15			13	845	639						1
Ohio	26	3	14	8	1	748	1,161						
Oklahoma	16	3	1	8	4	1,005	1,498						203
Pennsylvania	47	40	6		1	2,604	2,764						
Tennessee						8	14						
Texas	69	42	4	22	1	4,005	7,041	12			12		785
Utah							2						
Virginia						1							
West Virginia	17	2	10	3	2	507	463						
Wyoming	2	2				60	92						3
Total this week	376	207	40	100	29	15,020	21,424	51	4		47		2,135
Total last week	349	196	37	98	18	14,601	20,691	49	5	2	42		2,072
†Total this year	15,020	7,901	1,252	3,920	1,947			2,135	271	32	1,826	6	

* Includes old wells deepened, water intake, gas input, salt water disposal, and distillate wells.
‡ OPC program calls for 4,000 wildcats in 1942, of which 624 should produce oil and 116 gas, leaving 3,260 dry.
† Revised.

of c s½ s½ 22-3s-14w, AV 2756-2777 ft, McC 2866-2872 ft, 150 bbls, 2881 ft.

Wayne County—Pure's Brown 1, c e½ se ne 28-1n-7e, McC 3174-80 ft, 58 bbls, 3200 ft.

M. Barner's Green Comm. 2, c w½ se nw 22-1s-6e, abnd 3227 ft.

Texas Co.'s Warren 2, c w½ sw se 22-1s-6e, McC 3188-3210 ft, 107 bbls, 3247 ft.

Sohio Prod. Co.'s Harris 4, c ne ne 25-1s-6e, McC 3247-50 ft, 25 bbls, 3255 ft.

Texas Co.'s Jones 1, c w½ nw nw 34-1s-6e, McC 3168-85 ft, 3190-96 ft, 329 bbls, 3211 ft.

Pure's Tubbs 1, c sw sw 12-1s-7e, AV 3061-78 ft, 339 bbls, 3097 ft.

Pure's Blackburn A-1, c ne nw 13-1s-7e, AV 3063-90 ft, 95 bbls, 3090 ft.

Deep Rock's Blackburn B-1, c sw sw 20-1s-7e, L. O'H 3211-24 ft, 220 bbls, 3265 ft.

Sun's' Mauck 1, c nw sw 20-1s-7e, L. O'H 3209-14 ft, 72 bbls, 3258 ft.

Texas Co.'s Smith 1, c n½ ne sw 7-3s-6e, abnd 3434 ft.

Texas Co.'s Buchanan-Butler Comm. 1, c n½ sw nw 8-3s-6e, abnd 3395 ft.

White County—Amerlagene, Inc.'s Rudolph Unit 1, c sw ne 18-4s-10e, Tar Spgs 2490-98 ft and 2510-18 ft, 78 bbls, 2538 ft.

Burr Lambert's Meade 1, ne se se 23-5s-9e, abnd 3155 ft.

Carter's Edwards 1, c nw se 16-7s-8e, AV 2992-3019, 2 bbls, 3024 ft.

Hiawatha O&G's Vail 5, sw sw se 19-7s-11e, Cyp 2449-60 ft, 35 bbls, 2460 ft.

ILLINOIS OLD WELLS DEEPENED

Madison County—M. D. Bryant et al's Becker Hrs 1, c nw se 16-3n-6w, Trenton 2356-2404 ft, otd 2384 ft, 336 bbls, 2404 ft.

Marion County—Texas Co.'s Williams 18, se ne se 31-2n-2e, otd 3340 ft, Trenton 4480-4580 ft, 191 bbls, 4580 ft.

Wabash County—Continental's A. E. Shultz A-6, ne ne se 8-2s-13w, otd 2480 ft, Cyp and Bethel 2409-23 ft, 2432-60 ft, and 2535-77 ft. 12 bbls, 2577 ft.

Wayne County—Kewanee O&G's Beck-Sanford Comm. 1, c nw nw 29-1s-7e, L. O'H 3204-51 ft, otd 3225 ft, 114 bbls, 3251 ft.

Deep Rock's Craig 1, 150 ft w of c n½ s½ 30-1s-7e, otd 3235 ft, McC 3224-50 ft, 2165 bbls, 3250 ft.

White County—S. C. Yingling's A. J. Poorman 4, se sw se 19-3s-8e, otd 1400 ft, AV 3208-18 ft, McC 3285-3352 ft, 70 bbls, 3352 ft.

ILLINOIS WILDCAT COMPLETIONS

Clay County: Failure—Mid-Sun Oil Corp.'s Davis 1, c n½ ne nw 8-4n-6e, abnd 2851 ft.

Edwards County: Failure—Central PL Co.'s D. C. Stanniger 1, ne nw ne 31-1n-14w, abnd 3208 ft.

Franklin County: Failure—W. C. McBride, Inc.'s C. Mower 1, se se sw 14-5s-1e, abnd 2940 ft.

W. F. Catlett's Franklin Co. Coal 2, ne nw sw 2-7s-4e, abnd 3290 ft.

Gallatin County: Failures—R. B. Martin's Minor 1, se ne ne 28-8s-9e, abnd 2978 ft.

Sohio's Crawford-Wright 1, ne sw sw 12-8s-10e, abnd 2751 ft.

Hamilton County: Failure—Cherry & Kidd's Leach et al 1, nw ne se 23-3s-7e, abnd 3470 ft.

Jefferson County: Failure—Ohio's I. C. 1, c n½ se ne 34-2s-4e, abnd 3206 ft.

Richland County: Failure—Ohio's Nelson 1, nw nw se 20-3n-10e, abnd 3299 ft.

Saline County: Failure—W. G. Fortner et al's Tison 1, sw ne ne 26-7s-6e, abnd 3051 ft.

St. Clair County: Failure—L. L. Benoist's Tiedeman 1, se sw nw 8-2n-7w, abnd 300 ft.

Wayne County: New Field—Jablonski & Duncan's Cox 1, c se sw 35-1n-8e, AV 2976-95 ft, 180 bbls, 2996 ft.

White County: New Field—Guy Mabee's G. W. Leathers 1, c se ne 2-7s-8e, Vethel 2789-2804 and 2818-2875 ft, 140 bbls, 2875 ft.

Williamson County: Failure—Tioga Oil Co.'s H. Biehl Comm. 1, nw nw nw 8-8s-3e, abnd 2921 ft.

Smokey Oil Co. et al's Isaacs 1, c s½ se nw 36-8s-3e, abnd 2898 ft.

St. Clair County: Failure—O. A. Reed's Phillips 1, se ne se 19-2s-6w, otd 995 ft, abnd 1570 ft.

ILLINOIS WILDCAT STARTS

Clay County—Sinclair Wyoming's Rose 1, sw ne ne 12-2n-5e, lcn.

Clinton County—W. B. Lagers' C. Rudolph 1, se nw nw 32-3n-3w, lcn.

Coles County—W. L. Topf's T. D. Bosler 1, sw sw ne 26-14n-9e, dr.

Franklin County—Kerns & Shaw's McLaughlin 1, sw sw nw 1-5s-1e, dr.

National Pet. Co.'s Geo. Anderson 1, c se sw 18-5s-4e, dr.

E. S. Adkins' Old Ben Coal Co. P-1, nw ne se 35-7s-2e, lcn.

Greene County—G. Goodman's V. Reineke 1, ne se se 17-10n-10w, dr.

Hamilton County—Aetna Oil Co.'s Giffle-Hanson Comm. 1, nw se ne 33-4s-7e, dr.

Delta Prod. Co.'s T. W. Allen et al 1, c s½ ne nw 17-5s-7e, lcn.

Madison County—Watkins Drlg. Co.'s Ziegler 1, sw ne se 3-3n-6w, lcn.

Kingwood's Hirsch 1, sw se sw 9-3n-6w, dr.

Gulf's P. Stewart 1, nw ne ne 21-4n-8w, lcn.

Marion County—Texas Co.'s Conant 1, nw nw se 25-4n-2e, dr.

St. Clair County—Guy Nations' Kinglage 1, c se se 33-1n-6w, dr.

Union County—Little Egypt Oil Co.'s Basler 1, ne se se 35-11s-1w, dr.

INDIANA FIELD COMPLETIONS

Daviess County—J. W. Cannon's Jas Hart 1, c nw nw sw 4-2n-5w, abnd 825 ft.

Gibson County—R. D. Brown, Inc.'s Clem-Lehman 1, sw ne nw 36-1s-10w, Hardins 1353-70 ft, 90 bbls, 1370 ft.

Charles Clark's R. Townsley 1, nw nw nw 2-3s-9w, abnd 1814 ft.

Spencer County — Frank Forrest's Amos Eberhardt 1, sw ne nw 2-5s-6w, abnd 1200 ft.

Earl Paulson's R. J. Stewart 1, se se se 28-6s-5w, abnd 1004 ft.

W. E. Gary, Jr.'s L&O Howard 1 (3), c e½ se se 35-7s-7w, abnd 939 ft.

Warrick County—H&S Drlg. Co.'s Grant Johnson 1, c s½ sw sw 35-4s-6w, abnd 1204 ft.

INDIANA WILDCAT COMPLETIONS

Posey County: Failure—G. L. Parris' Spencer 1, c se se 28-6s-14w, abnd 2990 ft.

Posey County: New Field—Gulf's Ries 1, c w½ sw nw 23-7s-14w, McC 2737-44 ft, 20 bbls, 2744 ft.

Posey County: Failure—John W. Carter et al's Edgar Alldredge 1, c se nw 22-6s-14w, abnd 3015 ft.

Starke County: Failure—John E. Short's Uncapher et al 1, ne ne ne 1-34n-1w, abnd 300 ft.

Vanderburg County: Failure—S. C. Yingling's Wm. Gerlach 1, ne se sw 17-7s-11w, abnd 1771 ft.

INDIANA WILDCAT STARTS

Daviess County—R. D. Brown, Inc.'s Disser 1, c s½ sw ne 16-2n-6w, lcn.

Lake County—Wm. H. Moulton's Turner 1, se ne se 10-33n-8w, lcn.

Posey County—Calstar Pet. Co.'s Shoultz 1, se ne sw 12-5s-14w, dr.

KENTUCKY FIELD COMPLETIONS

Daviess County—W. Sargent et al's Harris 1, 11-P-27, Penn 1033-48 ft, 24 bbls, 1051 ft.

Staves Drlg.'s M. E. Cravens 1 (3), 20-N-28, abnd 1379 ft.

Union County—Pure's Richards A-1, 6-O-20, Waits 1782-88 ft, 9 bbls, 1806 ft.

KENTUCKY WILDCAT COMPLETIONS

Henderson County: New Field—Cherry-Kidd & Lacy's Burbank 1, 24Q-21, McC 2674-2683 ft, 144 bbls, 2685 ft.

KENTUCKY WILDCAT STARTS

Daviess County—J. C. Miller's Massie 2, 2-P-28, dr.

Union County—Sun's Highland 1, 20-P-19, lcn.

Oklahoma

North Okemah Extended Over Half a Mile

North Okemah extended. Shallow well and one testing at Liberty. Guthrie townsite not so favorable.

Okfuskee County: North Okemah has a 1320-ft north extension in British American Oil Producing Co.'s Bloss 1, SWc 36-12-9e. Well topped Gilcrease at 3111 ft, drilled to 3160 ft in barren sand section but from upper part of sand body swabbed 60 bbls in 7 hrs; 130 bbls in 17 hrs, testing incomplete.

Noble County: Liberty pool has its second successful completion, Sunray's Schultz 1, C NW SE 9-22-2e, making approximately 100 bbls of fluid, 50 percent water. Well is producing from Perry sand, near 2600 ft, a plug-back from the deeper zones which failed to show. Deep Rock's Schultz 2, C SE SW 9-22-2e, which returned a mediocre show at 2375-87 ft, is waiting on plugs for a test. Deeper sections were dry.

Logan County: Guthrie townsite's wildcat, Sunray's Welch 1, C NW SE 7-16-2w, is backing up after showing for nothing in Second Wilcox. Test previously found saturation in First Wilcox and Marshall zone as well as upper dolomite. Subsequent test of First Wilcox proved no production.

OKLAHOMA FIELD COMPLETIONS

Creek County: Hickory Grove—Foundation's Fixico 1, c se sw 2-14n-7e, B'ville 3120 ft, 3,500,000 gas, 925 lb rock pressure, 3135 ft.

Mid-Continent's Bear 5, c sw se 3-14n-7e, B'ville 3117 ft, wtr 3202 ft, abnd 3205 ft.

Hughes County: Semi-Wildcat—Cities Service's Naple 1, c ne 23-9n-11e, sand 2125 ft, shot 40 qts 2224-2244 ft, 0.1 gas, abnd 2244 ft.

Logan County: West Navina—Cities Service's Cavanaugh 1, sw se sw 2-15n-4w, Layton 5031 ft, abnd 5151 ft.

Logan County: Semi-Wildcat—Cities Service's Underwood 1, c sw sw 11-15n-4w, 2nd Wilcox 6700 ft, pb 4995 ft, abnd, td 6747 ft.

Okfuskee County: N. Baltimore—R. Patterson's Bell 1, c n½ ne sw 13-12n-11e, Senora 843-986 ft, abnd 986 ft.

Okmulgee County: Brinton—W. B. Pine's Shotwell 5, c nw se 9-13n-12e, Wapanucka 2168 ft, abnd 2256 ft.

Okmulgee County: S. Beggs—R. H. Pierce's Reading 1, se ne sw 25-15n-11e, Dutcher 2200 ft, abnd 2872 ft.

Payne County: W. Stillwater — Portable Drlg's Cory 1, ne nw sw 20-19n-2e, Dolo 4795 ft, abnd 4917 ft.

Pawnee County: West Watchorn—Alma's Wentz 1, sw se ne 26-23n-3e, Dolo 3901' ft, flow 900 bbls, 3922 ft.

Pottawatomie County: N. St. Louis—Mid-Continent's Varner 1, c se ne 21-8n-4e, Hunton 4025 ft, 5000 gals acid, pump 30 bbls oil, 5 wtr, 4040 ft.

Stephens County: Velma—Skelly's Selby 34, se ne sw 26-1s-5w, sand 766 ft, pay 774-81 ft, pb 781 ft, pump 12 bbls oil, 5 wtr, 815 ft.

OKLAHOMA OLD WELLS DEEPENED

Creek County: Glenn—Gulf's Berryhill 9, sw se ne 17-17n-12e, otd 1491 ft, Glenn 1425-91 ft, abnd 1538 ft.

Gulf's Berryhill 10, c s½ sw ne 17-17n-12e, otd 1492 ft, shot 160 qts 1519-70 ft, pump 3¾ bbls oil, 25 wtr, 1573 ft.

Gulf's Berryhill 13, se sw se ne 17-17n-12e, otd 1536 ft, Glenn 1423-1578 ft, pump 11.62 bbls, 1581 ft.

Kiowa County: Hobart—Phillips' Warner 2, nw ne se 19-7n-17w, otd 1186 ft, Viola 1188 ft, pay 1188-99 ft, pay 1205-11 ft, pump 209 bbls oil, 70 wtr, 1211 ft.

Kansas

Lindsborg Production Defined to West

Two-zone Lindsborg field defined to west. Wildcat important to exploration southwest of uplift is staked in Pawnee. Edwards County test re-acidizing in Kansas City-Lansing.

McPherson County: Lindsborg field, producing from both Viola lime and from a section of sand in the Simpson, has been defined at a west edge location by J. E. Mabee's Simon 1, C W½ SE SW 8-17-3w. Well failed to show in Viola, productive in offset completions, or in Simpson section, producing to northeast.

Pawnee County: Cities Service's Peters B-1, NE SW 29-20-18w, is an off-trend wildcat location on the northeast edge of Dodge City Basin.

Edwards County: Cities Service's English 1, NE NE 8-25-16w, northeast flank test in basin which showed but failed to commercially complete in Viola, Simpson and Arbuckle, is acidizing through perforations at 2960-75 ft., Kansas City-Lansing section.

KANSAS FIELD COMPLETIONS

Barton County: Kraft Prusa—Harry Gore's Oeser 2, c ne nw 17-16s-11w, Lansing 2971 ft, flow 2157 bbls, 3068 ft.

Stanolind's Lamatach 1, ne se sw 16-17s-11w, Arb 3282 ft, 4800 gals acid, pb 3290 ft, flow 50 bbls, 3291 ft.

Gulf's Soeken 2, nw se ne 21-17s-11w, Arb 3240 ft, 3000 bbls, 3255 ft.

Shell's Disque 2, ne sw ne 22-17s-11w, Arb 3269 ft, flow 3000 bbls, 3287 ft.

Ellsworth County: Unnamed Pool — Mid-Plains' Alden 2, c n½ se se 32-17s-9w, Arb 3227 ft, acid 2500 gals, flow 1015 bbls, 3238 feet.

Jefferson County: McLouth—Miller et al's R. Edmonds 2, c ne sw 16-9s-20e, Miss 1491 ft, abnd 1491 ft.

O. J. Connell & Lemon's Handke 1, c sw ne 16-9s-20e, sand 1342 ft, small show heavy black oil 1362-1382 ft, abnd 1382 ft.

McPherson County: Lindsborg—M & L Oil's Johnson 2, c w½ se se 7-17s-3w, Viola 3339 ft, acid 4500 gals, pump 413 bbls, 3346 ft.

M & L Oil's Helberg B-1, c w½ sw ne 18-17s-3w, Viola 3354 ft, acid 6000 gals, pump 595 bbls, 3359 ft.

M & L Oil's S. Hoaglund 1, c w½ se nw 18-17s-3w, Viola 3372 ft, acid 5000 gals, pump 883 bbls, 3376 ft.

Phillips County: Ray—Cities Service's Reese D-2, sw se ne 29-5s-20w, Arb 3601 ft, perf, acid 1000 gals, flow 3000 bbls fluid 60 percent wtr. 3683 ft.

Cities Service's Wallgreen B-1, sw se nw

PROTECT YOUR POWER EQUIPMENT FROM "ENEMY!"

PROPER MAINTENANCE GREATLY PROLONGS LIFE OF MOTORS AND HELPS TO CONSERVE MATERIALS AND MAN HOURS . . . !

Among the worst "enemies" at large in industry is deterioration and untimely breakdown of vital mechanical equipment. Precious time is lost and production of Victory material hampered when breakdowns occur.

Since Electric Power is vital to our Victory program, it is *important* that motors and other power equipment be kept in perfect operating condition at all times. Much valuable material has been prepared on the subject of proper maintenance and care of motors, from which the information in box at right has been reproduced. Read these suggestions carefully, and put into practice. Don't let breakdowns interrupt your march to VICTORY!

ELECTRIC MOTOR INSPECTION SCHEDULE

EVERY WEEK

1. Examine commutator and brushes.
2. Check oil level in bearings.
3. See that oil rings turn with shaft.
4. See that shaft is free of oil and grease from bearings — keep oil where it belongs.
5. Examine starter, switch, fuses, and other controls.
6. Start motor and see that it is brought up to speed in normal time.
7. Keep windings clean.
8. Check alignment of motor with machine to which it is directly connected.

EVERY SIX MONTHS

1. Clean motor thoroughly, blowing out dirt from windings and wipe commutator and brushes.
2. Inspect commutator clamping ring.
3. Check brushes and renew any that are more than half worn.
4. Examine brush holders and clean them if dirty. Make sure that brushes ride free in the holders.
5. Check brush pressure.
6. Check brush position.
7. Drain, wash out, and renew oil in sleeve bearings.
8. Check operating speed or speeds.
9. Check grease in ball or roller bearings.
10. See that end play of shaft is normal.
11. Inspect and tighten connections on motor and control.
12. Check current input and compare with normal.
13. Run motor and examine drive critically for smooth running, absence of vibration, worn gears, chains, or belts.
14. Check motor foot bolts, end-shield bolts, pulley, coupling, gear and journal setscrews, and keys.
15. See that all motor covers, belt and gear guards are in good order, in place, and securely fastened.

ONCE A YEAR

1. Clean out and renew grease in ball or roller bearing housings.
2. Test insulation by megger.
3. Check air gap.
4. Clean out magnetic dirt that may be hanging on poles.
5. Check clearance between shaft and journal boxes of sleeve-bearing motors, to prevent operation with worn bearings.
6. Clean out undercut slots in commutator.
7. Examine connections of commutator and armature coils.
8. Inspect armature bands.

Use Utility Electric Power!

PETROLEUM ELECTRIC POWER ASSOCIATION

Box 1498, Oklahoma City, Oklahoma

29-5s-20w, Arb 3630 ft, flow 2329 bbls, 3652 ft.

Pratt County: Cunningham—Skelly's Hoagland 1, c e½ sw nw 25-27s-11w, Lansing 3421 ft, acid 6000 gals, flow 327 bbls, 3472 ft.

Reno County: Schweizer — Mid-Continent's Smisor 4, sw ne sw 30-22s-9w, Viola 3669 ft, acid 500 gals, pump 201 bbls, 3675 ft.

Texon's F. E. Leslie 1, sw sw se 30-22s-9w, Viola 3683 ft, acid 500 gals, pump 114 bbls oil, 91 wtr, 3704 ft.

Hinkle Oil et al's Schweizer 3, sw ne nw 31-22s-9w, Viola 3682 ft, pump 425 bbls, 3716 ft.

Reno County: Hendrickson—Cities Service's Keesling 2, c nw sw 1-23s-10w, Viola 3721 ft, flow 120 bbls, 3739 ft.

Reno County: Peace Creek NE—Cities Service's Heylmun B-3, sw se nw 12-23s-10w, Viola 3741 ft, flow 2690 bbls, 3748 ft.

Cities Service's Sentney 4, c se ne 14-23s-10w, Viola 3750 ft, acid 500 gals, flow 450 bbls oil, 2550 bbls water, 3772 ft.

Reno County: Peace Creek—Cities Service's Krey A-2, sw sw sw 22-23s-10w, Viola 3802 ft, abnd 3823 ft.

Rice County: Chase—McPherson Drlg's Patton B-5, c nw sw 9-19s-9w, Arb 3245 ft, perf 3242-3247 ft, pump 396 bbls, td 3306 ft.

Rice County: Keesling Area—Auto Ordnance's Pulliam 1, c n½ se se 33-19s-9w, Arb 3205 ft, acid 5000 gals, pump 136 bbls, 3227 ft.

Rice County: Eberhardt—J. H. Tatlock's Bernstorf 1, c n½ nw nw 30-19s-10w, Arb 3328 ft, pay 3048-55 in Lansing, perf 3046-53 ft, 1000 gals acid thru perfs, pb 3240 ft, pump 50 bbls, 3337 ft.

Rooks County: Dopita—Phillips & Continental's Iruss 1, c nw ne 31-8s-17w, Arb 3380 ft, acid 500 gals, pump 309 bbls, 3389 ft.

Russell County: Neidenthal—Frontier Fuel's Milburger 1, c ne ne 24-14s-15w, Gorham 3204 ft, flow 3000 bbls oil 28 percent wtr, 3206 ft.

Russell County: Greenvale—Phil-Han's Soukup 4, c n½ sw sw 3-15s-12w, Lansing 2976 ft, pay 3067-70 ft, acid 10,000 gals, pump 953 bbls, 3070 ft

Russell County: Karst—Phil-Han & Adair-Morton's Karst 3, c e½ se se 22-15s-14w, Arb 3342 ft, acid 1500 gals, flow 3000 bbls, 3346 ft.

Russell County: Trapp—Republic's Resner 5, c ne nw 23-15s-14w, Arb 3358 ft, pump 250 bbls, 3367 ft.

Sedgwick County: Robbins—Steinbuschel & Murfin's Martin 2, c se nw 18-28s-1e, Simp 3491 ft, abnd 3533 ft.

Stafford County: Zenith—Dasa's McComb 4, c e½ se ne 22-24s-11w, Viola 3809 ft, perf, acid 3000 gals, pump 151 bbls oil, 38 wtr, 3853 ft.

New Mexico

Two Lea County Wildcats Nearing Decisive Levels

Two Lea County wildcats are nearing decisive levels, and both structurally high for respective areas. Deep prospect on east side of county drilling below regular Permian producing zones.

Lea County: Ohio Oil Co.'s State-McCormick 1, C NE NE 36-9s-37e, near Texas border, was drilling at 4750 ft in San Andres, topped at 4220 ft, elevation 3956 ft. This marker is 27 ft high when correlated with Rowan-Nichols' State 1, a 5077-ft failure situated 4⅝ miles to southwest that had nominal saturation at 5023-41 ft. Ohio will cement pipe near 4950-ft level. Geo. P. Livermore's State-Maxwell 1, C NW NW 26-15s-34e, 8 miles northwest of Lovington, is drilling hard lime at 5240 ft. Topped San Andres lime 4555 ft, elevation 4077 ft, being 19 ft high to J. W. Brown et al's State 1, a 5507-ft failure 2⅞ miles south by east. Latter had show of oil and gas with water after plugging back and acidizing at 5318 ft.

NEW MEXICO FIELD COMPLETIONS

Eddy County—Barney Cockburn et al's Etz 6, c se sw 35-16s-30e, flow 374 bbls 2-in natural, sand 3003-04 ft.

Danciger's Turner 7-B-x, near c sw se 17-17s-31e, flow 120 bbls, 2-in, acid 4000 gals, 3365-69 ft, td 3447 ft.

NEW MEXICO WILDCAT COMPLETIONS

Eddy County: Failure—Yates & Stroup's Koonce 1, c se nw 21-19s-31e, elev 3497 ft, salt series 577-1965 ft, top Yates 2155 ft, abnd 2429 ft.

Guadalupe County: Failure—Franklin Pet. Corp.-Phillips' Anton Chico 1, c sw sw 24-11n-18e, elev 5385 ft, top Abo 1380 ft, Arkose 1736 ft, abnd in granite 1965 ft.

West Texas

More Wildcats Due In Lubbock County

Crane County wildcat completion checks discovery drouth in West Texas. Lubbock County prospect commanding attention, and more wildcats due for county. Pipe-line proration terminated in Permian Basin September 1 after being enforced by one or more buyers at intervals since February 10.

Crane County: Magnolia's Glenn 1, 2½ miles southeast of Simpson-sand producer in south extension of Sand Hills and same distance northeast of nearest Ordovician producer in Abell field, discounted its relatively low structural position in flowing 287 bbls of 44-gr oil, gas-oil ratio 425/1, natural through ¼-in in 24 hrs from Simpson saturation at 6137-86 ft in McKee zone, topped 6125 ft, elevation 2436 ft. Magnolia, Gulf and Continental are largest lease owners, and more development to follow.

Lubbock County: J. R. Sharp et al's Elliott-Stanolind 1, was fishing drill pipe at 5763 ft in Clear Fork topped at 5260 ft, elevation 3307 ft. Trace of porosity logged at 5475 ft, and nominal oil stains below 5530 ft. Sharp and associates are negotiating for Clear Fork tests on Sec 12, Blk E-2 and Sec 8, Blk D-6 both involving farm-outs by Stanolind.

Pecos County: M. D. Bryant et al's McDonald 1, first deep test for Rowan-Tong depleted shallow pool, was drilling dry conglomerate and red shale at 5230 ft in detrital, topped at 4775 ft, elevation 2488 ft. This projected Ordovician test is in syncline, as Gulf and Millar 1, situated 3½ miles west by south, quit in granite at 4532-38 ft, elevation 2577 ft, with only 36 ft of overlying detrital zone.

Crane County: Texas Co.'s T.P. Land Trust-Frasier 1, northeast corner of county, abandoned at 6209 ft. Skelly's Richardson 1, 2½ miles northwest of Girvin and 7 miles north by west of the Wentz 2-well pool, was drilling unidentified lime at 4040 ft, with Ordovician as objective.

WEST TEXAS FIELD COMPLETIONS

Cochran County: Slaughter — Anderson-Prichard's Neal 6, 440 ft from n and 4850 ft from w lines leag 57, Refugio CSL, flow 659 bbls cas, acid 11,000 gals; shot 40 qts 4965-87 ft, td 4989 ft.

Crane County: Gulf-Waddell—Gulf's Waddell 55, ne nw se PSL 10, blk B-23, flow 8309 bbls 32-gr open, acid 5000 gals 3470-82 ft.

Crane County: Sand Hills—Magnolia's Lea 16, c se nw PSL 9, blk B-32, flow 314 bbls ½-in natural, ratio 434/1, td 4508 ft.

Crockett County: Clara Couch—Cities Service's Owens-Hoover 1, c ne ne HE&WT 14, blk GG, elev 2737 ft, Yates 1200 ft, lime 1901 ft, abnd 2274 ft.

Ector County: North Cowden—Stanolind's Holt 2-F, 661 ft from n and 674 ft from e of w½ ne T&P 18, blk 43, T-1-N, flow 1102 bbls oil 22 water, shot 785 qts 4511-4780 ft.

Gaines County: Wasson—Mabee O&G Co.'s Willard 1-39, c sw ne PSL 39, blk AX, flow 564 bbls ¾-in, acid 10,000 gals 4910-5000 ft.

Hockley County: Slaughter — Honolulu's Mallet 25-A, 665 ft out nwc lab 8, leag 52, Scurry CSL, flow 742 bbls 2½-in, acid 6000 gals 4980-5021 ft.

Texas Co.'s Lucas 3, 554 ft from s and 1874 ft from e lines n-372-ac PSL 7, blk AX, flow 803 bbls, 4% bs&w, cas, acid 3000 gals 5003-31 ft.

Howard County—Fleming Oil Co.'s Dodge 7, sw nw nw T&P 15, blk 30, T-1-S, pump 195 bbls, shot 640 qts 2620-2946 ft.

Terry County: Slaughter—DeKalb Agricultural Assn.'s Jacobson 4, 1874 ft from e and 766 ft from s lines sec 6, blk D-11, J. H. Gibson sur, pump 146 bbls, 2½% w, acid 10,000 gals 5024-44 ft, td 5062 ft.

Geo. P. Livermore's Glimp 5, 1271 ft from s and 1947 ft from e lines PSL 8, blk X, elev 3542 ft, abnd 5064 ft.

Ward County — Jas. H. Snowden-L. H. Freedman et al's Wristen-Gulf 7-A, 1670 ft from nw and 2325 ft from ne lines H&TC 18, blk 5, pump 186 bbls natural, sand 2466-2600 ft.

Snowden - Freedman et al's Wristen-Gulf 8-A, 1661 ft from sw and 2331 ft from se lines H&TC 18, blk 5, flow 232 bbls ¼-in natural, 2404-81 ft.

Snowden - Freedman et al's Wristen-Gulf 10-A, 996 ft from ne and 2330 ft from se lines H&TC 18, blk 5, pump 220 bbls natural, sand 2400-2548 ft.

Winkler County: Emperor—Skelly's Halley 51, ne ne nw PSL 16, blk B-11, flow 799 bbls ¾-in, shot 162 qts 2775-2889 ft.

Yoakum County: Wasson—Belfort Oil Co.'s Stanford-Humble 2, c sw ne sec 836, flow 640 bbls, ¾-in, acid 9000 gals 4925-5150 ft.

WEST TEXAS WILDCAT COMPLETION

Nolan County: Failure—Tex Harvey Oil Co.'s Tipton 1-A, 1650 ft from s and 710 ft from w of s-200-ac of w½ T&P 43, blk 19, elev 1979 ft, dry Noodle Creek lime 2784-2820 ft, top Strawn 5040 ft, abnd 5495 ft.

West Central Texas

Taylor County Wildcat Has Prolific Oil Flow

Taylor County wildcat discovery confirms production trend between Merkel and Wimberly pools with prolific flow. Runnels County has prospective oil strike.

Taylor County: Butler-Horne Drilling Co.'s Reddin 1, T&P Sec 25, Blk 17, northwest offset to firm's Hudson 1, recent 2900-ft failure that logged 6 nominal oil shows in Lower Hope and Breckenridge, opened new pool with rated natural flow of 1000 to 1500 bbls oil through 7-in, cemented on top of Flippen sand at 2248 ft. Well is bottomed at 2251 ft. This discovery is 1½ miles southwest of Wimberly pool, and 2 miles northeast of Merkel pool. It will receive new pool allowable of 40 bbls daily, but the oil must be marketed by tank trucks.

Runnels County: Pawnee Royalty Co.'s Davis 1, Sec 330, Blk 64, F. J. Ford (H&TC) Sur, 2¼ miles southeast of Winters and 6½ miles northwest of McMillan pool, filled 800 ft with fluid, estimated 70 percent oil, in 8 hours after drilling oil-saturated sandy-lime with tools at 2454-64 ft, elevation 1786 ft. This prospective pool opener was scheduled to drill to 4500 ft, but will attempt to complete in the above oil zone after plugging back.

Stephens County: Texas Pacific Coal & Oil Co.'s Hill 7, Acct. 1, TE&L 1122, originally completed from 3100-ft Bend in 1926, and later temporarily abandoned, developed 4,000,000 ft gas with considerable water from Marble Falls at 3900-12 ft, bottomed in shale at 3919 ft. Five-inch pipe will be lowered to deepen to Mississippi. It is 1¼ miles southwest of single Marble Falls producer in Donnell pool.

WEST CENTRAL TEXAS FIELD COMPLETIONS

Coleman County — Anderson - Prichard's Featherston 2, GH&H 52, blk 2, abnd 3080 ft.

Jones County—M. J. Delaney's Short 2, 990 ft from e and 1050 ft from n lines sw BBB&C sec 191, flow 254 bbls, 24/64-in natural, Palo Pinto lime 3247-53 ft.

Fain-McGaha Oil Corp.'s Horne 1, 330 ft out NWc w-80 of 150-ac tr out nw part G. Martinez sur, flow 720 bbls, ¾-in natural, lime 2403-13 ft.

WEST CENTRAL TEXAS WILDCAT COMPLETIONS

Coleman County: Failure—Ungren - Frazier et al's Witt 1, nw nw sw GH&H 3, blk 2, elev 1661 ft, abnd 1809 ft.

Shackelford County: Failure—Fain-McGaha Oil Corp.'s Morris 1-B, se se nw ET 167, elev 1800 ft, abnd 1704 ft.

North Texas

Two Oil Prospects In Montague County

Two new oil strikes in prospect for Montague County, and production tests under way on two wildcats in Simpson. Confirmation well given Clay County pool. Deeper oil pay found in Young County pool.

Montague County: Sinclair Prairie's Eanes 1, G. A. Bench Sur, 6¾ miles southwest of Bowie and 4½ miles northwest of Gant-Laird pool, nearest oil area, prepared to deepen, possibly to Ellenburger, from 5926 ft after indicating production from 2 zones in Bend, topped at 5812 ft, 21 ft high. Drill-stem test at 5816-33 ft yielded 250 ft of mud, carrying considerable free oil. Tester used in conglomerate at 5912-26 ft enhanced the outlook with good gas blow in 6 minutes and 210 ft of oil and 90 ft of oil-cut mud; 1950 pounds bottom-hole pressure. Sinclair Prairie's Henderson 2, 2 miles east by north of Denver and twin to 6935-ft junked wildcat, awaiting production test after plugging back from 7766 to 7195 ft, with 7-in at 7143 ft, to test oil saturation in Simpson, topped at 7106 ft. Continental's Hildreth 1, 1¾ miles northeast of Gant-Turner pool, must rely upon acid, or light nitro shot to attain flowing production from Simpson at 7100-7201 ft. Well was washed with oil, then swabbed 166 bbls new oil on 24-hr test, and 44 bbls the next 24 hrs. In northeastern Montague, R. C. Lipscomb et al's Vaughn-Harmon 1, 2¼ miles northwest of Illinois Bend, was idle in shale at 3562 ft after obtaining encouragement for production in Strawn. Tester used at 3440-60 ft yielded 15 ft of oil and 75 ft of oil-cut mud in 1 hr, while second test at 3465-84 ft showed 30 ft oil-cut mud and 510 ft of salt water.

Clay County: Roy Lee, Trustee's Watson 1-A, east offset to Watson pool discovery, flowed 387 bbls initial on 3/16-in choke, acidized 3000 gals through perforations at 5474-84 ft in Bend, topped at 5208 ft, 22 ft low on revised call, flowing cp 650 to 900 lbs and tp 150 to 450 lbs. Closed-in pressure 1475 and 1100 lbs, respectively, indicating much better well than discovery. Lee et al plan considerable development, if producing area warrants.

Young County: Hanlon & Buchanan's Street 2, situated on 281-ac lease, John Conner Survey, opened deeper pay in north portion Kisinger pool, flowing 30 to 35 bbls oil hourly through casing natural from conglomerate at 4070-80 ft in Marble Falls, topped at 3790 ft. Standard of Texas and Hanlon-Buchanan's Daws 1, 11 miles west by south of New Castle, is awaiting results of acid treatment in Bend at 3847-60 ft after showing a small volume of free oil with water on swabbing test.

NORTH TEXAS FIELD COMPLETIONS

Clay County: Ringgold—Gulf's Worsham-Spring 7, 660 ft from n and 1980 ft from e lines H&TC 37, blk 4, Bend 5473 ft, Ellenburger 5661 ft, pump 28 bbls, 46-gr, shot 50 qts, 5497-5657 ft, acid 13,000 gals, td 6220 ft, pb to 5657 ft.

Clay County: Spring—Texas Co.'s Stine 1, 534 ft fr w and 579 ft fr n lines ne H&TC 24, blk 4, top Bend 5556 ft, flow 294 bbls ½-in, acid 8000 gals, 5560-5621 ft.

Cooke County: Walnut Bend—Sinclair Prairie's Cox 8-A, 1650 ft fr w and 330 ft fr n lines lse, blk 59, Fannin CSL, flow 324 bbls, Ramsey sand 4894-4906 ft.

Wichita County: K-M-A Ellenburger—Kadane-Griffith Oil Co.'s Mangold 7-B-E, 883 ft fr w and 330 ft fr s lines blk 39, P. Castleman sur, flow 1975 bbls, ¾-in, acid 3000 gals, 4241-4304 ft.

Wilbarger County: Consolidated—Consolidated Oil Co. et al's Ancell 2-N, 1191 ft fr s and 504 ft fr e lines H&TC 35, blk 6, top K-M-A lime 3818 ft, Bend 4051 ft, Miss 4441 ft, Ellenburger 4448 ft, abnd 4549 ft.

Young County—Stanley A. Thompson et al's Vaughn 3-A, sw¼ sec 4, T. B. Clark sur A-1796, top Bend 3875 ft, Marble Falls 4298 ft, abnd 4347 ft.

NORTH TEXAS WILDCAT COMPLETIONS

Clay County: Failure—Wilder Drilling Co.'s Dunn 1, 330 ft from n and 990 ft from w lines blk 24, Byers subdiv, abnd 1870 ft.

Cooke County: Failure—W. T. Lucas et al's King 1, 330 ft out swc n½ of w-80 of 255-ac tr, M. Langham sur A-564, 3 mi s Myra, elev 968 ft, abnd 1070 ft.

Montague County: Failure—S. H. Fagadau et al's La Force 1, 660 ft out nwc 477-ac tr, J. Short sur A-664, Ellenburger 4503 ft, abnd 4507 ft.

NORTH TEXAS WILDCAT STARTS

Archer County—W. C. Young-Burk Roy. Co.'s W. H. Thomas 1, 330 ft from s and 990 ft from w lines 40-ac lse out nw part sec 132, Harris subdiv, lcn.

Geo. W. Proctor et al's Langford 1, 1358 ft s of n and 1760 ft w of e lines blk 135, but in blk 128, J. W. Carson subdiv, lcn 3000 ft test.

Denton County—C. H. Gannon Drl. Co.'s Aetna Life (McBride) 1, 660 ft out swc of R. W. Wright sur A-1437, 2 mi s Bolivar, lcn 2000-ft test.

Young County—A. G. Talbot and S. W. Robitaille's P. Ferguson 1, 660 ft out sec Sylphia Tynes sur A-274, lcn 4500-ft test.

TEXAS PANHANDLE FIELD COMPLETIONS

Gray County — Phillips' Duncan-Bryant (Gatsey) 1, se se nw H&GN 155, blk B-2, 8,600,000 gas, 377 lbs pressure, shot 140 qts 2625-2736 ft, td 2812 ft.

Phillips' Jackson-Lehaman 1, se se nw H&GN 185, blk B-2, elev 3269 ft, flow 48 bbls, 2-in, shot 250 qts, 2771-2871 ft, td 2997 ft.

Hutchinson County—Harry Stekoll et al's Christian (North) 2, sec 31, blk V, pump 25 bbls, acid 3000 gals, 3000-45 ft.

Special Gas Rule For Old Ocean Field

A net gas-oil ratio of 2000/1 was provided in an order issued last week by the Texas Railroad Commission for the Old Ocean field in Brazoria County. Heretofore the field has been subject to the regular 2000/1 statewide rule.

First rule of its kind ever issued by the Railroad Commission, the order defines net gas as the difference between the volume of gas produced from a well and the volume of gas from that well which is returned to the producing formation and gas sold or utilized under existing laws.

Also included in the order was a provision allowing establishment of 640-acre production units with a maximum of 16 wells to a unit. Wells producing with high gas-oil ratios may be closed in, and their allowables assigned to wells on the same unit producing with lower ratios, provided further that not more than half the wells on the production unit may be closed in for such purposes.

Esperson Exempt

Exemption of Esperson Dome, Liberty County, from shutdowns during September was authorized in a special order issued by the Texas Railroad Commission last week.

Long Horn Allowable

An order increasing the daily allowable in the Long Horn field, Duval County, from 844 to 1467 barrels was issued last week by the Texas Railroad Commission.

East Texas

Chapel Hill Extended Two Miles South

Talco field's first projected Smackover lime test registered 1400-ft displacement on anhydrite, and had reached the Lower Trinity without cutting through to upthrow side of fault. East outpost in Coke pool doubtful for production. Cherokee County deep discovery failed to take acid. Chapel Hill given two-mile south extension by small well.

Franklin County: J. B. White et al's Jackson 1, north edge of Talco field and ½ mile east by north of a 5903-ft Travis Peak failure that showed nominal amount of oil in Rodessa, was drilling shale at 7250 ft, apparently still on downthrow side of fault. Jackson 1 logged massive anhydrite at 6660-6800 ft, a normal section, but 1425 ft low to the nearby deep test, which cut the fault at 4575 ft for a short section of Georgetown.

Wood County: Magnolia's Robinson 1-B, ¼ mile east of production in Coke pool, was pulling core at 6320-40 ft, having failed to show production possibilities above this level, although within 30 ft of the pool's fairly constant water level. Magnolia's Robinson 1, southeast outpost, was drilling 6115 ft, and in all probabilities too low to produce from Paluxy. Amerada has six wells awaiting potential gauge, else in process of completion, including Robertson 1, most northerly well, that is testing oil saturation at 6265-6372 ft.

Cherokee County: Humble's Curtis 1, recent oil discovery on the Larissa prospect, that has been flowing from 64 to 84 bbls of 47-48-gravity oil daily through ¾-in tubing choke from Pettit perforations at 10,160-10,200 ft, is to be reperforated at lower zone in the Pettit. The original perforations failed to take acid under a maximum pressure of 3000 pounds.

Magnolia's Braly 1, projected 9000-ft Trinity test for Mixon area, was drilling at 4960 ft in Georgetown, topped at 4888 ft, with protection string of 9-in at 4515 ft.

Smith County: Sinclair Prairie's Swinney 1, extended Chapel Hill field 2 miles south with a flow of 14 bbls of oil in 11½ hours through ½-in choke after extended swabbing to kick off. Pettit perforations at 8158-8280 ft, embracing oil saturated zones, were given two-stage treatment of a total of 8000 gallons of acid to attain production. Although Swinney 1 is a subnormal producer, the intermediate acreage, which is largely held by Sinclair Prairie, is automatically placed in line for development.

EAST TEXAS WILDCAT COMPLETIONS

Henderson County: Failure—Bobby Manziel et al's Levine 2, 6060 ft from n and 4400 ft from w lines M. M. Sanches sur, elev 344 ft, Austin 3120-3560 ft, Woodbine 3994 ft, Georgetown 4746 ft, abnd 4848 ft.

EAST TEXAS OLD WELL DEEPENED

Upshur County: Failure—O. J. Perren et a's McClelland 1, 4850 ft from e and 6850 ft from s lines of M. P. Torres League, 5 mi se Gilmer, elev 379 ft, otd 3977 ft, Woodbine 3739 ft, Georgetown 3995 ft, Paluxy 5210 ft, abnd 5350 ft.

EAST TEXAS WILDCAT STARTS

Hopkins County—O. W .Killam et al's Matthews 1, 660 ft out sec 112-ac lse, Geo.

C. Roberts sur, north edge Cumby, lcn Paluxy test.

Clark Sample-Thos. Humphrey's (was Donnie Pet. Co.) Welborn 1, 660 ft out swc 55-ac lse, Jas. Webb sur, 1½ mi se Como, elev 526 ft, Woodbine 4464 ft, rur to deepen from 4500 to 6500 ft.

Hunt County—Ira L. McMahan, W. F. Stelzer et al's Winifred 1, 660 ft out nec 45-ac tr, Jas. McKinney sur, mile s Campbell, lcn.

Nacogdoches County—Texas Co.'s Strahan 1, 990 ft from n and 660 ft from w of 110-ac lse, 447 ft w and 1578 ft s of swc Jas. Walling sur, but in M. J. Ariola sur, lcn for Travis Peak test.

Wood County—Delta Drl. Co.-Rube Benton's Goldsmith-Shell 1, 633 ft from n and 660 ft from e lines 67½-ac lse, S. G. Purse sur, lcn Trinity test.

Harrison County: Waskom—First National Petroleum Trust's Armstrong 1, Holloway survey, flow 62 bbls 44-gr, 1,000,000 gas, tp 525, cp 775, perf Travis Peak, 5904-6068 ft, td 7005 ft, established oil production on west flank of Waskom gas area.

Arkansas Louisiana Gas Co.'s O'Banion 1, Bryant survey, flow 20,000,000 gas, perf Travis Peak, 6240-60 ft, td 6998 ft.

Panola County: Carthage—Glassell & Glassell's Frost 3, Gibson survey, flow 9,800,000 gas from Glen Rose and 19,800,000 cubic ft from Pettit.

EAST TEXAS FIELD COMPLETIONS

Rusk County: Pleasant Grove—Ross Sears et al's Pool 2, 523 ft ne of sw line 100-ac tr, 990 ft se No. 1, Geo. May sur, pump 130 bbls, Woodbine 4057-58 ft.

Smith County: Chapel Hill—Shell's Campbell 2, 450 ft from s and 1525 ft from e lines J. D. Parchman sur, elev 470 ft, Pettit 8051 ft, flow 439 bbls, ¾-in, acid 4000 gals Pettit perf 8084-8252 ft, td 8307 ft.

A. G. Hill-Chapel Hill Gas System's Elliott-Humble 1, 1550 ft from s and c of e&w lines 204-ac tr, T. P. Payne sur, massive anhydrite 7040-7262 ft, Pettit 7858 ft, Travis Peak 8085 ft, 25,000,000 gas open, acid 4000 gals Rodessa perf 7362-7478 ft, td 8122 ft.

Wood County: Hawkins—Humble's Dagnell 4, 467 ft from n and 1167 ft from w lines 141.47-ac lse, W. Parker sur, flow 422 bbls, ¼-in, Woodbine perf 4569-76 and 4605-73 ft, td 4700 ft.

Humble's Robinson 1-B, M. A. Esparcia sur, flow 416 bbls, ¼-in, perf 4642-60 ft, td 4778 ft.

Stanolind's Christian Missions 4, 772 ft w and 340 ft s of nec of 104.2-ac lse, S. Castleberry sur, flow 292 bbls, ¼-in, perf 4700-10 ft, td 4821 ft.

Southwest Texas

Jackson County Area Production Extended

Rigs and derricks repaired and drilling resumed following storm. Extension to recently discovered Stewart field completed, while Jim Hogg County wildcat finds gas sand.

Storm Damage: A number of rigs and derricks were repaired last week following a hurricane September 1 that halted drilling on a number of wildcats and caused a halt in several field operations. Derricks were damaged in St. Charles field, Aransas County, and in Pettus field of Bee County. In Sarco Creek area of Goliad County, Ginther, Warren & Ginther of Houston lost the drill pipe in Wood 1 when the derrick was blown down. When the storm struck, 3300 ft of pipe was dropped with the hole bottomed at 4620 ft, still above the Vicksburg objective. Opening of at least a gas-distillate field on this prospect is assured with operators making a successful test of Frio sand at 4053-70.

Derrick was repaired on a wildcat west of Texana in Jackson County and drilling has started again while 3 miles southwest of Cordele field, also in Jackson County, rig was repaired to resume work. Operators on an outpost in Poth field, Wilson County, rebuilt derrick and resumed operations. Hole was bottomed at 2510 ft.

Jackson County: W. Stewart Boyle has completed Meyer 1, semi-wildcat ¾ mile south of his Rose & Sample 1 discovery of Stewart field. Well flowed 192 bbls on ⅛-in choke from perforations at 4965-75 ft in discovery pay. Although upper markers are reported to have run low to those in the discovery, a fault was cut which brought lower formation markers about level with the discovery. Total depth is 5051 ft.

Boyle is making another test on Copsey 1, in the southwest corner of Humble's 676-ac lse in the George Sutherland survey. This well ½ mile northeast of discovery, was perforated at 4990-97 ft, and flowed oil with 1150 pounds pressure on tubing, but small amount of salt water broke into flow.

Houston Oil Co. has set 5½-in to make production test in Clement 1, wildcat southeast of Texana field, Jackson County. Pipe was cemented at 5760 ft in Frio. This wildcat is 4500 ft south of Moore & Ahern's Druchel 1 distillate producer at Texana and south of Gulf's Simons 2 gas-distillate well in S. F. Austin league.

Jim Hogg County: Sun Oil Co. conducted considerable coring in East 1, wildcat in Santa Domingo de Arriba grant, 26 miles southwest of Hebbronville. A drill-stem test at 3998-4003 ft showed 400 pounds gas pressure although recovery was only 1 stand of mud and water.

Texas Hearing Set

A hearing to determine whether or not special rules should be adopted for the Alta Loma field, in Galveston County, has been called by the Texas Railroad Commission for September 14.

Additional hearings scheduled for the same day include:

Revision of tubing requirements in the South China field, in Jefferson County; new pool allowable for the Cross Development Company's Nickols 1, in Ward County; to determine whether or not re-allocation of allowables of high gas-oil ratio wells to wells having lower ratios on the same lease should be authorized.

LOWER TEXAS COAST COMPLETIONS

Jackson County: North LaWard—Stanolind's Four-Way Ranch 1, Unit 2, 554 ft fr wl & 776 ft fr sl blk 121, IGN 3, sand 5216 ft, 5½-in 5225 ft, perf 5217-22 ft, 193 bbls, ⅛-in, gor 585-1, td 5225 ft.

Jackson County: Mayo—Stanolind's Meyer 1, 490 ft fr nl & 467 ft fr el of 177-ac lse T. H. Robertson sur, 5½-in 5541 ft, perf 5326-52 ft, flow 83 bbls, ¼-in, td 5544 ft.

Tide Water's Ratliff 1, 477 ft fr se & swl Francis Menefee sur 51, 5-in 5508 ft, perf 5420-24 ft, 103 bbls, ⅛-in, td 5600 ft.

Jim Wells County: Seeligson—Sun's Miller 7, 1980 ft fr el & 562 ft fr sl sec 66, Nancy Russell sur 336, 5½-in 5959 ft, perf 5937-40 ft, 110 bbls, 7/64-in, td 5970 ft.

Jim Wells County: LaGloria—Texas Co.'s Moos 1, 1980 ft fr wl & 2640 ft fr sl e½ sec 7, Los Olmos y Loma Blanca gr, abnd 7762 ft.

Nueces County: East Stratton — Southern Minerals' Stratton Community 47, 3160 ft fr nel of 1669-ac lse, perf 6503-13 ft & 6516-26 ft, 59 bbls, 3/32-in, td 6698 ft.

Refugio County: Mission River — Sunray's Mitchell 3, 330 ft fr nl & 430 ft fr wl 519-ac lse, perf in sand topped 5784 ft, flow 348 bbls, ¼-in, td 6580 ft.

San Patricio County: Midway—F. M. Boykin's Boykin-Reed 1, 853 ft fr swl & 467 ft fr sel of 80-ac tr, Coleman-Fulton Pasture Lands, 5½-in 6130 ft, sand 6070 ft, perf 6078-81 ft, 315 bbls, 9/64-in, td 6134 ft.

British-American's Mullen 1, 660 ft fr sw & nwls 160-ac lse, Coleman-Fulton Pasture Lands, sand 6078 ft, perf 6078-84 ft, 112 bbls, ¼-in, td 6135 ft.

San Patricio County: Odem—Seaboard & Atlantic's Compton 1, 500 ft fr n&wls blk 10-A, Juan Hart & Sons gr, 5½-in 5550 ft, perf 5321-25 ft, 77 bbls, ⅛-in, td 6920 ft.

SOUTHWEST TEXAS FIELD COMPLETIONS

Duval County: Rios—Argo Oil Co.'s Carroll 1, 2777 ft fr n&sls & 1550 ft fr el 254-ac tr, El Senor de la Carrera gr, 7-in 6225 ft, abnd 6805 ft.

McMullen County: South Campana—Texas

GAS-LIFT PRINCIPLES AND PRACTICES

By S. F. SHAW, E. M.
Consulting Engineer

This book is largely based on a series of lectures on gas lift delivered before the Petroleum Engineering Department of the Agricultural and Mechanical College of Texas on November 9th and 10th, 1939, by the author as special lecturer of the Department of Petroleum Engineering.

A history of the development of the air-gas lift is given, covering operations in air and gas-lift, and noting some of the inventions that have been patented in connection with this work.

The performance data in the numerous tables are selected from some 15,000 actual field tests made to determine the best rates at which to produce a well, these tests being made by the author or under his supervision, in many fields of the United States and foreign countries.

The principles controlling operation of the gas-lift are discussed, curves and formulas are given for determining the quantity of gas required to lift liquids, and curves and formulas are given for determining the capacity of various sizes of pipes in certain fields, and methods are discussed for determining similar formulas and curves in new oil fields.

A lengthy discussion of the selection of compressors and building of plants suitable for handling gas-lift operations is given.

CONTENTS:

History and Invention; General Principles Controlling Gas-Lift Operations; Lifting Efficiency; Lift and Submergence; Pressure; The Eductor; Straight or Continuous Gas-Lift; Combination Gas-Lift Flow; Intermittent Gas-Lift Flow; Compressor Plant Installations; Gas-Lift Practices in Various Fields.

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Co.'s Weinert 1, 467 ft fr n&els of BS&F 103, perf 3043-45 ft, 59 bbls, ⅛-in, td 3045 ft.

Starr County: Rincon—Continental's Slick 2, 985 ft fr el & 979 ft fr sl of CCSD&RGNG 219, 6-in 4039 ft, perf 4030-38 ft, 203 bbls, 3/16-in, td 4039 ft.

SOUTHWEST TEXAS WILDCAT COMPLETIONS

McMullen County: Failure — Harold Boysen's Hagist 1, 2 mi w Loma Alto field, H&TC 9, abnd 4200 ft.

McMullen County: Failure—Quintana's South Texas Syndicate 2, nw cor James Fitzpatrick sur 18, abnd 6411 ft.

Webb County: Failure—O. W. Killam's Garcia Hrs 2, 1 mi nw McLean field, 640-ac lse, sur 609, abnd 3246 ft.

SOUTHWEST TEXAS WILDCAT STARTS

Duval County—Glenda Oil & Bunn's Peters 1, Kohler area, 60-ac tr, J. H. Gibson sur 397, lcn 2900-ft test.

Duval County—Texon Royalty Co.'s Holzapfel 1, 467 ft fr s&wls of blk 9, GWTP 178, lcn 1200-ft test.

LaSalle County—Magnolia's Burks Rch 1, ctr n & sl & 2446 ft fr el Antonio Herrera sur 263, lcn 6500-ft test.

McMullen County—Quintana's South Texas Syndicate 3, nw¼ James Fitzpatrick sur 18, lcn Wilcox test.

SOUTH CENTRAL TEXAS WILDCAT COMPLETIONS

Wilson County: Failure—Diamond Half Oil Co.'s Korzewka 1, 190-ac tr in A. Gable sur, 8 mi s Stockdale, abnd 4650 ft.

Wilson County: Failure—L. D. Ormsby's Caldwell 1, 6 mi ne Floresville, 95-ac lse John W. Brown sur, abnd 3015 ft.

Texas Gulf Coast

Harris County Wildcat Believed Oil Producer

New field indicated in East Rosslyn area of Harris County with pipe set in wildcat. Second location projected in Fostoria area while 10,000-ft test planned in Sargent area of Montgomery County.

Harris County: George W. Strake has set casing to make test in Florence & Parker 1, wildcat in East Rosslyn area 2½ miles southwest of West Aldine discovery, that has indicated opening of new oil field in Cockfield-Yegua sand section. Although drilled to 8005 ft, best sand section was cored at 6590-6614 ft. This structure is regarded entirely different from West Aldine which has distillate production. Several tests are scheduled to be made in event this first level fails to produce.

Montgomery County: Atlantic Refining Co. has made second location in Fostoria, although discovery well was completed several months ago; Foster Lumber Co. 2, 660 ft fr north line and 660 ft fr west line of 486-ac tract in M. B. Lawrence survey. It is 1670 ft northeast of Foster Lumber Co. 1, which tested Wilcox but was completed in Cockfield. The second well is projected to 6000 ft, deep enough to catch Cockfield sand.

In Lake Creek area, Montgomery County, Superior Oil Co. is making another test in Frost 1 in perforations at 10,148-172 ft in Wilcox after failing to establish production in lower horizons. This well, which is bottomed at 13,293 ft, is 40 ft short of record depth of any well on Upper Gulf Coast which was established by Superior in Lake Creek field proper in McWhorter 1-B, which was drilled to 13,333 ft.

Strake Petroleum Co.'s Jones 1, wildcat on Willis prospect, Montgomery County, has been drawing more than usual attention since it is reported to have found shows in Wilcox sand. Although formation tops have not been released, an electrical survey was run to 8001 ft and drilling was resumed from that point. A number of cores are said to have been taken.

Austin County: Ohio Oil Co. is doing some coring in Kaechele 1, wildcat Wilcox test southeast of Orange Hill in western part of county. Coring was started at 8711 ft near top of Wilcox. This wildcat is several miles westerly from Shell's Hintz 1, which recently opened distillate production northwest of Sealy.

Matagorda County: Texas Co. is preparing to drill Hamill 1, wildcat on 11,082-acre tract in William Baxter survey, to 10,000 ft. This is deepest well the area has had, although Sterling Oil & Refining Co. drilled a 6930-ft dry hole in Samuel Holt survey northwest of the present location, but was too shallow to test lower horizons. The well is 9 miles south of Sargent townsite.

Fort Bend County: Gulf has resumed drilling in Ehlert 1, deep wildcat northeast of discovery well in Needville field. Operators ran into heaving shale around 8130 ft, and had to condition the hole before going ahead. Regular field production is around 5100 ft, but this well will be carried considerably deeper.

TEXAS GULF COAST FIELD COMPLETIONS

Brazoria County: Old Ocean—Harrison & Abercrombie's Mueller 2, 160-ac tr M. B. Nuchols sur, 7-in 10,908 ft, perf, flow 455 bbls ¼-in, td 10,908 ft.

Harris County: North Houston—Kirby's Daniel 2, 598 ft fr el sec 24, abnd 1510 ft.

Jefferson County: West Beaumont—Stanolind's Treadway 7, 1230 ft fr e & 932 ft fr sl sec 3, H. Williams sur, 5½-in 5388 ft, perf, flow 99 bbls ⅛-in, td 5388 ft.

TEXAS GULF COAST WILDCAT COMPLETIONS

Jefferson County: Failure—Hebert & Smith, Dishman & Lucas, Rowan Drilling Co.'s

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Deaton 1, 515-ac tr, J. W. Denny sur, abnd 9500 ft.

Matagorda County: Discovery, North Bay City—Ohio Oil Co.'s McDonald 1, 100-ac tr, Jacob Betts lge A-7, perf 7871-74 ft, 310 bbls ⅛-in, tp 1230, cp 1370, gor 583-1, td 8688 ft.

Wharton County: Failure—General Crude's Security Bank 1, Lane City area, 660-ac tr S. Castleman sur, abnd 6514 ft.

Louisiana Gulf Coast

Major Extension to Bayou Sale Field Seen

Major extension to east side Bayou Sale field indicated. Another producer completed on southeast flank Starks field, while deep wildcat in Tuttle Bayou area of Terrebonne Parish takes sidewall samples.

St. Mary Parish: A major eastward extension to Bayou Sale field apparently is in making with Humble Oil & Refining Co. setting 5½-in casing in Miami Corporation 1-E. Bottomed at 11,102 ft, this semi-wildcat is 4000 ft east of Atlantic's St. Mary Parish Land 4, the nearest producer. Exact depths of the possible producing horizons have not been announced.

Calcasieu Parish: W. T. Burton has completed Industrial Lumber Co. 7 on southeast flank of Starks dome to further prove this side of the field to production. On potential gauge the well flowed 107 bbls of oil on 24-hour test through 13/64-in choke. The producer is 500 ft northeast of Industrial Lumber 6 which recently opened a new sand. Burton perforated this latest producer at 3700-24 ft.

Terrebonne Parish: Humble has been sidewall coring in Continental Land & Fur. 1, wildcat on Turtle Bayou prospect. Bottomed at 11,284 ft, this well attracted considerable interest although detailed information on sands encountered have not been released.

Jefferson Davis Parish: Union Sulphur Co. has completed an extension producer in Roanoke field. Operator's Anding 1, 1700 ft northwest of production, flowed 46 bbls of 56.5-gravity distillate on 16-hour test from 8665 ft. The test was made through 16/64-in choke with 700 pounds tubing pressure and casing pressure zero.

Pine Prairie: Development of flank leases constitute the main operations at Pine Prairie, Evangeline Parish, where at least six rigs are running. Humble has plugged back to 6296 ft to sidetrack in Guillory 2 after missing regular pay sand. The well was carried to 8496 ft before plugging back.

SOUTH LOUISIANA FIELD COMPLETIONS

Calcasieu Parish: Starks—W. T. Burton's Industrial 7, 55 ft s, 175 w ne cor 30-9s-12w, perf 3700-24 ft, 107 bbls 13/64-in, td 3961 ft.

Calcasieu Parish: Edgerly—Gulf's Hunter 2, 560 ft n, 360 e sw cor 22-9s-11w, abnd 6384 ft.

Cameron Parish: West Hackberry—Stanolind's State-Black Lake 63, 3235 ft n alg el fr se cor 17, th w at ra 3000 ft in 17-12s-10w, 7-in 9999 ft, perf 9830-9900 ft, 407 bbls, 12/64-in, td 10,000 ft.

Evangeline Parish: Pine Prairie—Stanolind's Ardoin 2, 1583 ft n, 866 e sw cor 37-3s-1w, 5½-in 8194 ft, perf 8112-34 ft, 293 bbls, 3/16-in, td 8665 ft.

Jeff Davis Parish: Roanoke—Union Sulphur's Anding 1, 440 ft s, 880 ft w ne cor se 2-9s-4w, perf 8645-61 ft, 48 bbls, 16/64-in, td 8665 ft.

LaFourche Parish: Delta Farms—California Co.'s Delta Farms 7, 1-17s-22e, 5½-in 9060 ft, perf 9020-54 ft, 221 bbls, ¼-in, td 9060 ft.

North Louisiana

Gasoline Plant-Gas Line Planned for North Lisbon

Well-founded reports are that Big West Drilling Company (Grady Vaughn) will build an absorption plant in the North Lisbon field, Claiborne Parish, and Arkansas-Louisiana Gas Company will lay a 10-inch gas line from the field to El Dorado, Arkansas, to supply war industries. Big West Drilling Company and Union Producing Company have been among the principal developers of the gas-condensate sector. Union Producing Company's most recent completion, Morrow Unit 1, 18-21n-4w, was completed from the Travis Peak at 5323 ft, after being drilled to the Smackover lime at 11,007 ft. It gauged 30,000,000 cubic ft of wet gas per day, with rock pressure of 2060 pounds. Same operator's Duke Unit 1, same section, made only a small wet gasser from the Cotton Valley series at 8505 ft and was killed and plugged back. It had been drilled to 11,455 ft.

Concordia Parish: The recently-discovered Lake St. John field holds attention with two new completions by The California Co., discoverer of the field, bringing the total to six. Same operator's Applegate 3, 13-9n-10e, blew out while coming out of hole after drilling to 3000 ft, but drilled ahead after killing gas flow. California Co.-Carter Oil Co.'s well drilled beneath Lake St. John on a state lease by means of directional drilling in Section 15-9n-10e, will test the usual Wilcox level at 4500 ft, after drilling to 6553 ft. Casing was run to 4770 ft.

Rapides Parish: In the Big Island area, Carter-Phillips' Eota Realty Co. 2, SE NE 14-4n-3e, an important wildcat, was abandoned at 7018 ft after sidewall cores showed salt water.

NORTH LOUISIANA FIELD COMPLETIONS

Claiborne Parish: Haynesville—Mid-States Oil Corp.'s Waller 2, 2-23n-8w, flow 404 bbls 9 hrs, ½-in, cp 810, tp 300, perf Pettit lime 5329-49 ft, acidized 5000 gals, td 5415 ft.

Ohio's Lowe Unit P-1-A, 17-23n-8w, flow 192 bbls 10 hrs, ¼-in, cp 850, tp 700, perf Pettit lime 5380-89 ft and 5432-44 ft, acidized 5000 gals, td 5500 ft.

Robert A. Stacy's Cadenhead Unit 1, ne sw 24-23n-8w, flow 135 bbls 2 hrs, 40 mins, ½-in, packer on casing, tp 200, perf Pettit lime 5299-5318 and 5362-66 ft, acid 4000 gals, td 5400 ft.

Bossier Parish: Sligo — Triangle Drilling Co.'s Thigpen-Herold C-1, c ne sw 19-17n-11w, pump 91 bbls, upper Glen Rose, 3182 ft.

Union Parish: Monroe (gas) — Interstate Natural Gas Co.'s Fee 116, c nw 30-21n-4e, flow 19,649,000 gas, rock pressure 529 lbs, acid 1500 gals, td 2135 ft.

Interstate Natural Gas Co.'s Fee 117, c ne 25-21n-3e, flow 6,682,000 gas, rock pressure 535 lbs, acid 1500 gals, td 2155 ft.

Morehouse Parish: Monroe—J. E. Farrel Co.'s State of Louisiana 40, se cor 21-21n-4e, flow 5,736,000 gas, rock pressure 429 lbs, td 2135 ft.

LaSalle Parish: Hemphill — Lamar Hunt

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Estate and Caroline Hunt Estate's Hailey 3, flow 200 bbls, 18 percent bs&w, 16/64-in, tp 150, cp 650, gor 485/1, perf Wilcox 3767-70 ft, td 4203 ft.

LaSalle Parish: Nebo—H. L. Hunt Co.'s Goodpine F-115, sw ne 28-7-3e, flow 115 bbls, 12/64-in, tp 400, cp 550, gor 844/1, perf Wilcox 3496-3504 ft, td 4288 ft.

Caddo Parish: Pine Island—A. Paul Gilbert's Bell 3, 34-22n-16w, pump 140 bbls, td 2430 ft.

Kennedy and Bacheller's Muslow 10, nw 5-20n-15w, pump 105 bbls, acidized 3000 gals, td 1935 ft.

Texas Co.'s Raines 24, c se sw 15-21n-15w, pump 150 bbls, acid 4000 gals, td 1690 ft.

Concordia Parish: Lake St. John—California Co.'s Applegate 1, 14-9n-10e, flow 152 bbls, td 4692 ft.

California Co.'s Applegate 2, 14-9n-10e, flow 121 bbls, td 4701 ft.

NORTH LOUISIANA WILDCAT COMPLETION

LaSalle Parish—Milton J. Houston's Gross 1, 19-8n-3e, abnd 1642 ft.

NORTH LOUISIANA WILDCAT STARTS

Catahoula Parish—H. L. Hunt's Louisiana Hardwood Tensas Delta A-2, c nw sw 8-4n-5e, lcn.

Arkansas

Miller County Well Will Make Distillate

Miller County: Carter Oil Co.'s Lena C. Orr et al 1, C SE NW 3-16s-28w, Miller County, ran casing to 7700 ft and is preparing to perforate and test in Smackover lime. Electrical survey showed porosity from 7346 to 7433 ft, a total of 87 ft, with breaks of dense lime, and water level at 7433 ft. Net condensate saturation was estimated at 40 to 50 ft. A large well is not expected, but a distillate producer is regarded as certain.

ARKANSAS FIELD COMPLETIONS

Lafayette County: Midway—Barnsdall's McClaine 8, c se se 13-15s-24w, abnd 6553 ft.

Union County: New London—Marine Oil Co.'s Brooks 1, se ne 13-18s-12w, flow 144 bbls, ¼-in, perf 5703-16 ft, td 5750 ft.

Columbia County: Stephens-Smart—D. H. Vaughn's D. M. Greene 1, 11-15s-20w, pump 77 bbls, perf 3410-18 ft, td 3470 ft.

Ouachita County: Stephens-Smart—Hunter Co.'s Morgan 1, nw se 16-15s-19w, abnd 3752.

ARKANSAS WILDCAT COMPLETION

Lafayette County—Mid-Continent's Russell 1, c ne ne 15-15s-25w, abnd 6647 ft.

Mississippi

Clarke County Wildcat To Test Oil Showing

Clarke County wildcat will make production test. Second well completed in Cary field, Sharkey County. Deep wildcat located in Simpson County.

Clarke County: Sohio Corp. will set pipe and make production test at Macro Drilling, Ltd., Long-Bell 1, SW SE SW 10-2n-16e, wildcat which on drill-stem test of Eutaw sand from 3658-86, ⅜-in top and bottom chokes, open 50 minutes, recovered 5 ft of clean oil, 25 ft of oil cut with mud and 90 ft of mud slightly cut with oil, no pressure and no water.

Sharkey County: Second well in the Cary field, British-American Oil Producing Co.'s Houston 2, NW NW 23-11n-7w, topped porosity at 3263 and drilled to 3265 when hole filled with 25-gravity oil and acidization with 500 gallons resulted in flow of 154 bbls on varying chokes, 14/64 to 18/64-in, in 11 hours, with 2 to 4 percent salt water and 32 to 56 percent b.s. Pressures varied from 195 to 270 pounds on tubing and from 295 to 300 on casing. Well was shut in waiting on flow line.

Simpson County: Gulf Refining Co. will drill Wilbe 1, C E½ NE 5-2n-4e, a deep wildcat.

MISSISSIPPI FIELD COMPLETION

Yazoo County: Pickens—Phillips' Maley 1, c nw nw 4-11n-3e, Eutaw 4827-80 ft, perf 4827-34 ft, flow 254 bbls oil, 4 salt water, 1-in, tp 25, cp 20, td 4900 ft.

MISSISSIPPI WILDCAT COMPLETIONS

Adams County—Sinclair Wyoming's Stowers 1, begin at nw cor sec 4 go s 15 deg e 1050 ft thence w 1000 ft to location in 16-8n-2w, elev 300 ft, Sparta 2550 ft, Cane River 3380 ft (sand 3430 ft) Tallahatta 3750 ft, Wilcox 3891 ft, base sandy Wilcox 7060 ft, Midway 7154 ft, abnd 7172 ft.

Claiborne County—Amerada's Arenz 1, begin at corners 24 and 25, go n 40 deg 21 mins w, 1181 ft thence s 49 deg 40 mins w 660 ft to location in 25-11n-3e, tops Cane River 2988 ft, Tallahatta 3315 ft, Wilcox 3570 ft, Midway 6818 ft, abnd 7002 ft.

Jones County—Sinclair Wyoming's Wausau 1, c nw sw 25-8n-10w, elev 315 ft df, tops, Wilcox 1760 ft, Midway 4102 ft, Selma 4822 ft, Eutaw 6072 ft, first sand 6112 ft, second sand 6199-6305 ft, basal sand 6450 ft, Tuscaloosa 6550 ft, top massive sand 7514 ft, cored salt water, abnd 7559 ft.

Scott County—R. N. Turnbow's Coward 1, 536 ft n, 454 e, c 29-8n-6e, Wilcox 1204 ft, Midway 3291 ft, chalk 3978 ft, Eutaw 5177 ft, Tuscaloosa 5605 ft, marine Tuscaloosa 6383 ft, abnd 6520 ft.

Yazoo County—C. A. Perkins' Iasigi 1, c ne ne 3-9n-1w, Wilcox 1858 ft, Midway 3898 ft, Selma 4447 ft, Eutaw 5853 ft, Tuscaloosa 6601 ft, abnd 7016 ft.

California

Buena Park Field Production Extended

Fresno County wildcat abandoned. Orange County producing area extended to northwest. Santa Barbara County test pumping trace of tarry oil.

Fresno County: After drilling to 7000 ft, Pure Oil Co.'s CGL 1, wildcat in 22-15-13, Mendota area, failed to encounter showings of interest, last cores showing water sand and shale, and is being abandoned. Base of Kreyenhagen was placed at 5820 ft, Domengine at 5900 ft, and bottom was in Cretaceous.

Orange County: Texas Co. has completed Buena Park 4-E-1, 36-3-11, Buena Park field, as a northwesterly extension of the area. On 21-hour pumping test well made 404 bbls of 24-gravity oil, cutting 12 percent mud, water and sand. Bottom was at 10,044 ft, production coming from perforations at 9315-9240 ft.

Santa Barbara County: Tide Water's wildcat test Davis 1, 33-8-31, Los Olivos area, has been placed on pump making a trace of tarry oil and 350 barrels daily of water from 405 ft of perforated pipe landed at 5031 ft. Bottom is at 5055 ft.

CALIFORNIA FIELD COMPLETIONS

Kern County: Belridge South—Belridge Oil Co.'s 87-A32, 923 ft n, 260 w se c 32-28-21, pump 30 bbls 15-gr, perf 780-790 and 820-830 ft, td 884 ft.

Belridge's 25A-33, 2249 ft n, 1066 e swc 33-28-21, pump 125 bbls 15.9-gr, perf 415-825 ft, td 825 ft.

Belridge's 27A-33, 922 ft n, 1066 e swc 33-28-21, pump 50 bbls 15-gr, perf 443-527, 570-611 and 741-784 ft, td 846 ft.

Belridge's 45A-33, 2246 ft n, 2395 e swc 33-28-21, pump 70 bbls 29.7-gr, perf 359-617 and 662-827 ft, td 827 ft.

E. A. Parkford's No. 4, 233 ft s, 166 w c 12-29-21, pump 60 bbls 13.7-gr, 158 ft perf 1102 ft, oil sand 921 ft, td 1105 ft.

Orange County: Huntington Beach—Signal's No. 42, 2263 ft n, 1760 w swc Standard Oil Co.'s Bolsa lease, Plot "C," flow 300 bbls 29.2-gr, 440 perf 3680 ft, td 3732 ft.

Los Angeles County: Wilmington—Union Pacific's UPE-40, 6363 ft s, 2562 e c/ls Ford

The Heck of Hectic Times

At a time like this everybody tries hard to be efficient. But conditions are so hectic that in too many cases a person being efficient reminds one of a blindfolded drunk pinning a paper tail on a paper donkey. And that's the heck of hectic times. We have nothing constructive to suggest except this: When it's supplies and equipment for drilling, producing, pipe-lining or refining, TRY PELCO FIRST. Sometimes, by pretending it's Hirohito, we get the tail on the donkey's last vertebra with the first jab.

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& Anaheim sts, flow 405 bbls 28.4-gr, 230/530 lbs, perf 3954-4044, 4059-4099 and 4123-4170 ft, td 4303 ft.

Santa Barbara County: Santa Maria Valley—Union's Bradley Lands 2-4, 330 ft s, 990 e nwc 36-10-34, pump 258 bbls, 471 ft perf 5208 ft, td 5250 ft.

Ventura County: Piru—Pacific Western's Temescal 13, 1509 ft s, 3891 e n line sec 4 & w line Temescal rd, pump 79 bbls 19.5-gr, 559 ft perf 3104 ft, td 3104 ft.

CALIFORNIA WILDCAT COMPLETIONS

Los Angeles County: Failure—Hamilton & Sherman's Kraemer 3-2, 1560 ft swly along c/l Central ave from c/l Alta Vista st, thence 660 ft wly parallel to Alta Vista st, barren Kraemer zone 4840 ft, abnd 5185 ft.

San Bernardino County: Failure—Union's Newman Bros. 1, 330 ft s, 890 w nec se ne 2-3-8, abnd 4868 ft.

CALIFORNIA WILDCAT STARTS

Kings County: Hanford Area—Continental's Drummond 1, 36-18-22, foundation.

Los Angeles County: Del Valle Area—Union's Newhall Land & Farming 1, 20-4-17, lcn.

Riverside County: San Jacinto Area—Wonder Oil Co.'s Stroh No. 1, 30-4-1, lcn.

Santa Barbara County: Careaga Area—Universal Consolidated Oil Co.'s Careaga 1, 5-8-33, lcn.

Tulare County: Tulare Lake Area—Shell's No. 21-28, 28-22-20, lcn.

Ventura County: Bardsdale Area—Robert S. Lytle's Elkins 1, 6-3-19, lcn.

Rocky Mountain Area

Year's Second New Sand at Pilot Butte

New producing horizon added to Pilot Butte field, Wyoming, second deep horizon discovery for field this year. North extension at Circle Ridge. North Hiawatha test has water following oil.

Pilot Butte: Superior's Stock 1, CEL NE NE 21-3n-1w, Fremont County, Wyoming, ⅛ mile southwest of Superior and British American's deep Tensleep sand discovery, old Pilot Butte field, swabbed 500 bbls daily from Embar lime for a new sand discovery. Drilled to 6750 ft, topping Tensleep at 6670 ft, which was dry and running 400 ft lower than the discovery; plugged back, perforated through 7-in at 6150-6210 ft, acidized, and is running rods and tubing. Superior and B-A's Tribal 2, NE NW SW 15-3n-1w, north of discovery, topped Tensleep at 6110 ft, running high, and is waiting on cement around 7-in at 6115 ft. Three other deep tests are under way in field, one is two miles to south of discovery.

Circle Ridge: Slight north extension to shallow Circle Ridge black-oil field, Fremont County, Wyoming, Continental's Shoshone Indian-766 6, CSL NE NE NE 1-6n-3w, has oil standing 875 ft in hole, td 1275 ft, and is running tubing to complete in porous Embar lime.

North Hiawatha: In North Hiawatha area, Sweetwater County, Wyoming, Vermillion Oil Co. and Johnson & Horton's Government 1, CSL NE NE 6-12n-99w, is swabbing 12 bbls of oil daily along with large amounts of water. Casing is perforated in Wasatch at 2643-50 ft, total depth. Operators will attempt to shut off water, and well may mark pool opener.

MONTANA FIELD COMPLETIONS

Glacier County: Cut Bank—Santa Rita Oil & Gas Co.'s Hammond 1, c ne ne 12-33n-6w, bailed 4½ bbls, elev 3907 ft, Upper Cut Bank 3110-15 ft, td 3134 ft.

Santa Rita's Yunck 2, se ne nw 23-34n-6w, bailed 5 bbls after standing 12 hours, elev 3760 ft, Lower Cut Bank 2920-25 ft, td 3030 ft.

Toole County: Kevin-Sunburst—Hardrock Oil Co.'s Waite 5, se ne nw 12-35n-2w, pump 200 bbls, 1428 ft.

Henry Vanderpas' Zachor 2, nw sw ne 20-35n-1w, pump 140 bbls, acidized 1000 gals, Ellis-Madison contact 1528-30 ft, td.

Fulton Petroleum Co.'s Thompson 6, sw sw ne 28-35n-3w, flow 120 bbls, ⅛-in, acidized 1000 gals Ellis-Madison contact 1728-47 ft, td.

WYOMING FIELD COMPLETIONS

Carbon County: Wertz—Sinclair Wyoming's Unit 30-A, ne nw se 1-26n-90w, swab 775 bbls, elev 7037 ft, Tensleep 6116, td 6397 ft.

Niobrara County: Lance Creek—Continental's Rodoe 4, sw sw sw 26-36n-65w, flow 300 bbls, Sundance, 4040 ft.

Michigan

Winterfield Test Has Sylvania Oil Production

Interest in the Winterfield district promises to draw revived interest with Pure Oil Co.'s McClain 1, E½ SE SE 30-20n-6w, Clare County, flowing by heads from Sylvania dolomite, first deep well in the field and opener of a fourth producing horizon. Well logged Sylvania at 5028 ft, and test showed 1500 ft oil in 18 hrs at 5035 ft, and at 5053 ft flow was 103 bbls oil in 24 hrs; at 5057 ft, 208 bbls in 24 hrs and 168 bbls in 18 hrs succeeding period at same depth. Hole will be deepened.

Samples showed soft to hard lime and dolomite and production was 45 gravity crude.

Initial production tests indicated best pay to date found in any horizon below the Upper Monroe in Michigan. Geologists tentatively correlated the horizon as isolated from the Richfield lime which is producing in at least three districts.

Gratiot County: Chartiers Oil Co.'s Church 1, NE SE NE 31-12n-3w, first

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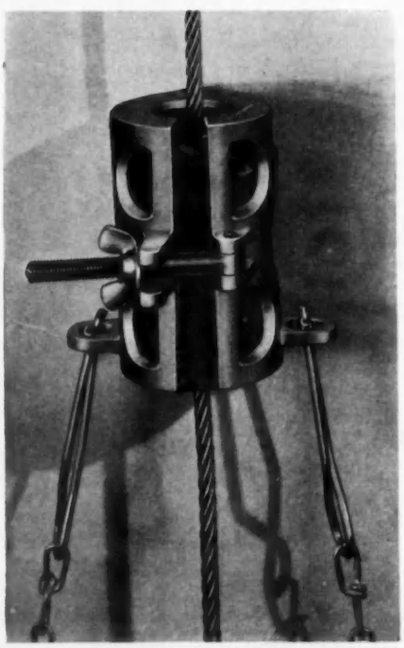

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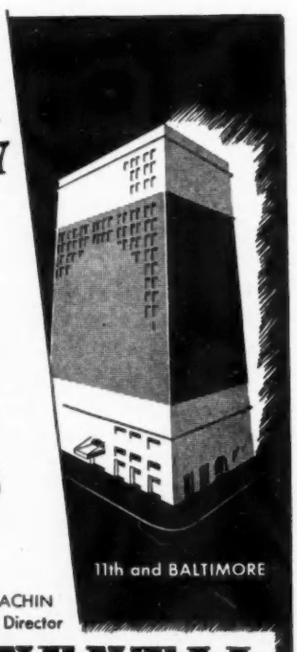

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producer in the county, flowed 298 bbls of pipe line oil in 4 hrs natural, and then started to cut water ranging up to 30 percent and depending on the amount of back-pressure held on 5-inch casing. Well developed production in Dundee between 3282-84 ft. Despite water, it was flowing average of 145 bbls day of 43.8-gravity oil on the sixth day. Tests through tubing were to be made before possible re-cementing of pipe.

Missaukee County: Sun Oil Co. logged Dundee lime at 3082 ft and cored oil saturation from 3085 to 3116 ft at Camlin 1, Section 10-24n-5w. Casing will be set for production test. Location is 1320 ft west of Sun's Horner 2, completed last month for 19 bbl discovery in Monroe at 4437 ft.

MICHIGAN FIELD COMPLETIONS

Bay County: Kawkawlin — Chapman Oil Co.'s Schultz 1, nw ne nw 2-14n-4e, Dundee lime, pump 98 bbls, 2900 ft.

Clare County: Headquarters—E. V. Hilliard's USA 1, n½ se se 4-20n-3w, Traverse lime, flow 189 bbls 3 hrs, 3345 ft.

Clare County: Winterfield—Taggart Bros. Co.'s Budd 104, c sw 31-20n-6w, Stray sand, 10,200,000 gas, 1327 ft.

Taggart Bros. Co.'s Hotchkiss 102, nw 31-20n-6w, Stray sand, 13,600,000 gas, 1353 ft.

Osceola County: Reed City—Ohio's Moore 1, s½ sw se 18-18n-10w, Traverse 2939 ft, flow 135 bbls 1st hr. estimated potential 900 bbls, 2946 ft.

Ohio's Clark A2, sw sw nw 4-17n-10w, Monroe lime, 126 bbls, 3549 ft.

Ottawa County: Wright—G. C. Gerrard's Luther 1, se se sw 31-8n-13w, Berea sand, abnd 1173 ft.

MICHIGAN WILDCAT COMPLETIONS

Allegan County: Failure—Michigan Devonian's Glupter 1, w½ ne ne 19-3n-13w, Traverse lime 1634 ft, dry 1684 ft.

Lake County: Failure — C. L. Maguire's Horojko 1, sw se sw 2-17n-12w, Monroe lime 3409 ft, dry 3510 ft.

Mecosta County: Failure—Columbia Oil & Gas Co.'s Satterlee 1, c nw sw 24-13n-8w, Monroe 3610 ft, so 3680 ft, so 3725 ft, sw 3780 ft, abnd 3790 ft.

Mecosta County: Failure — Guy M. Obenauer's Musgrave 1, sw se se 11-15n-7w, abnd 1350 ft.

Roscommon County: Failure—Sun's Hartwick 1, n½ nw ne 33-24n-4w, abnd 4548 ft.

Van Buren County: Failure—Muter Oil Co.'s Stromayor 1, sw nw nw 15-2s-15w, Traverse lime 1128 ft, abnd 1169 ft.

MICHIGAN WILDCAT STARTS

Missaukee County—Sun's State A-1, s½ sw nw 11-23n-5w, rig.

Newaygo County—C. D. Hoffman's Stone 1, w½ se se 23-11n-14w, lcn.

Oakland County—Frank Dhroner's Rauffaus 1, ne ne sw 2-4n-8e, rig.

Eastern States

NEW YORK COMPLETIONS

Allegany County—B. B. Oil Co.'s Curtis farm, Bolivar, 10 bbls, Richburg, 1377 ft.

New York Oil Co.'s Gadsby farm, Bolivar, 1 bbls, Waugh-Porter, 1533 ft.

Putnam Oil Co.'s Birtoil farm, Wirt, 7 bbls, Richburg, 1437 ft.

Ebenezer Oil Co.'s Vincent farm, Scio, 7 bbls, Richburg, 1119 ft.

Boyd Oil Co.'s Drum farm, Wirt, 7 bbls, Richburg, 1435 ft.

Otsquago Co.'s Pike farm, Alma, 12 bbls, Richburg, 1418 ft.

Pure Penn Oil Co.'s Gowdy farm, Scio, 7 bbls, Richburg, 1354 ft.

Bradley Bros.' Sawyer farm, Bolivar, 6 bbls, Richburg, 1416 ft.

Bradley Bros.' Sawyer farm, Bolivar, 5 bbls, Richburg, 1406 ft.

Marsh Oil Co.'s Fay farm, Bolivar, 11 bbls, Richburg, 1426 ft.

H. H. Patterson's Browning farm, Scio, 7 bbls, Scio, 868 ft.

McEbenwood Oil Co.'s Lynch farm, Andover, 9 bbls, Penny, 1432 ft.

Otto Oil Co.'s Bartlett farm, Bolivar, 7 bbls, Richburg, 1339 ft.

Bradley Prod. Corp.'s Coats farm, Wirt, 10 bbls, Richburg, 1382 ft.

Messer Oil Co.'s Koehler farm, Clarksville, 8 bbls, Richburg, 1362 ft.

INTAKE WELLS

Allegany County: Andrews Bros. Oil Co.'s Withey farm, Bolivar, Richburg, 1445 ft.

Producers Oil Co.'s "A," Keller-Scott farm, Wirt, Richburg, 1070 ft.

Messer Oil Co.'s "M," Russell farm, Alma, Richburg, 1436 ft.

Messer Oil Co.'s "M," Russell farm, Alma, Richburg, 1420 ft.

Bradley Prod. Corp.'s Russell farm, Alma, Richburg, 1379 ft.

Curt Oil Co.'s Williams farm, Alma, Richburg, 1372 ft.

J. F. McBride's Duke farm, Alma, Richburg, 1357 ft.

L. E. Norton et al's Coats farm, Scio, Richburg, 1261 ft.

Wood Oil Co.'s Brandes farm, Wellsville, Fords Brook, 1352 ft.

F. J. Wilson's Burdick farm, Wirt, Richburg, 1430 ft.

C. S. Christman & Son's Cass farm, Wirt, Richburg, 1423 ft.

Messer Oil Co.'s Bona Vista lease, Wellsville, Scio, 912 ft.

Messer Oil Co.'s Bona Vista lease, Wellsville, Scio, 944 ft.

OHIO COMPLETIONS

Ashland County—Kemrow Co.'s Equity 1, abnd 2769 ft.

Athens County—A. K. Engle's Bradford 1, abnd 1621 ft.

Ohio Fuel's Meade 2, abnd 972 ft.

Hocking County—Preston's Sunday Creek 210, 0.01 gas, 3568 ft.

Knox County—W. L. Blakely's Frazier 1, 0.85 gas, 2794 ft.

Ohio Fuel's Hammond 1, abnd 2953 ft.

Licking County—C. C. Moore's Lane 1, abnd 2805 ft.

Medina County—Ohio Fuel's Smith 3, 2.27 gas, 3415 ft.

Ohio Fuel's Euder 2, 0.17 gas, 3141 ft.

Meigs County—Ohio Fuel's Ledlie 2, 0.21 gas, 763 ft.

Ohio Fuel's Knapp 1, 0.4 gas, 616 ft.

Morgan County—Industrial Gas' Eppley 1, 2.3 gas, 4172 ft.

Bern Oil & Gas' Yocum 1, 1.0 gas, 939 ft.

Muskingum County — Gas Producing Co.'s Fisher 2, abnd 4047 ft.

Atha's Lake 1, 0.6 gas, 3400 ft.

Noble County—Worral & White's Way 1, abnd 1251 ft.

Perry County—Pure's Pargeon 3, 100 bbls, 3310 ft.

Clyde M. Foraker & Ohio Fuel Co.'s Milligan 1, 0.64 gas, 3614 ft.

Industrial Gas Corp.'s Fleer 1, 0.56 gas, 2938 ft.

Pure's Williams 6, 104 bbls.

Preston's Ford 2, 16 bbls & 0.03 gas, 3308 ft.

Tuscarawas County—Nat. Gas of West Va.'s Sweaney 1, 0.13 gas, 4828 ft.

Vinton County — Kelch Bros.' Waller 1, abnd 650 ft.

Washington County—Burkhart's Hall 3, 0.03 gas, 1460 ft.

Wayne County—Kemrow Co.'s Sidle 2, 0.63 gas, 3153 ft.

OLD WELL DRILLED DEEPER

Washington County—D. T. Orndoff's Bell 2, abnd 1230 ft.

PENNSYLVANIA COMPLETIONS

Allegheny County — Equitable Gas Co.'s Block 1, 0.15 gas, 4068 ft.

Armstrong County—Peoples Nat. Gas Co.'s Porter 1, 0.07 gas, 3523 ft.

Clarion County—Owens-Illinois Glass Co.'s Brown 1, 0.04 gas, 3260 ft.

Greene County — Walter Massing et al's Evans 1, 1.6 gas, 2326 ft.

Carnegie Nat. Gas Co.'s Iams 3, 0.02 gas, 3378 ft.

Washington County—Peoples Natural Gas Co.'s Myers 1, 0.64 gas, 1541 ft.

OLD WELL DRILLED DEEPER

Washington County—H. Williams' Buchanan 1, 0.1 gas, 1262 ft.

WEST VIRGINIA COMPLETIONS

Braxton County—Pittsburgh & W. Va. Gas Co.'s Keener 7875, abnd 2321 ft.

Calhoun County—Creed Yoak et al's McDonald 2, 15 bbls, 2268 ft.

Godfrey L. Cabot's McKown 1, abnd 2561 ft.

Clay County—Joe Rubin's Wetherell 2, 4.0 gas.

Dodridge County—Edmond Tate's McConnell 1, 0.2 gas, 1204 ft.

Jackson County—Mullins Gas Co.'s Parsons 1, 10.56 gas, 5087 ft.

Columbian Carbon Co.'s Starcher 2, 3.11 gas, 5366 ft.

Mullins Co.'s Parsons 1, 4.73 gas, 5360 ft.

Kanawha County—Godfrey L. Cabot's McLean 16, 0.78 gas, 5206 ft.

Lincoln County—United Fuel's Mohler 5079, 1.78 gas, 1759 ft.

Monongalia County—So. Penn Nat. Gas Co.'s Tennant 3, 0.03 gas, 3005 ft.

Ritchie County—Pitts. & W. Va. Gas Co.'s Thomas et al 1, 0.2 gas, 1987 ft.

Tyler County—South Penn's McCormick 6, 5 bbls, 2215 ft.

Wayne County—Owens-Libby-Owens' Wilson Coal Land 624, 0.13 gas, 3462 ft.

Wetzel County—Shriver Oil & Gas Co.'s Shriver 2, abnd 3547 ft.

OLD WELLS DRILLED DEEPER

Gilmer County—McCall Drlg.'s Turner 1, 2 bbls & 0.2 gas, 1626 ft.

Wetzel County—Carnegie Nat. Gas Co.'s Teagarden 3, 0.04 gas, 3280 ft.

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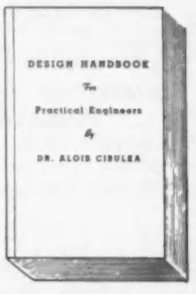

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Men in the Industry's News

GEORGE SAWTELLE, president of Texas-Mid-Continent Oil and Gas Association, will address the next meeting of the Houston Chapter of the API on "War Time Protection of Oil Fields," at the Houston Club, September 9, 1942, at 6:30 p. m. Sawtelle will discuss work done to protect fields in the area and plans for the future. He also will talk on professional fire fighting.

The annual scholarship award of $100 by the Houston Chapter to an outstanding junior Rice Institute engineering student will be presented at this meeting.

ROY COCHRAN, East Texas field chemical engineer for the Texas Railroad Commission the past five years, has resigned to become assistant superintendent of Arkansas Fuel Oil Company's natural gasoline plant near Magnolia, Arkansas.

EARLE M. BOGGESS, secretary-treasurer, has announced the Los Angeles Basin Chapter of the Division of Production of the American Petroleum Institute will meet September 15. Program will include papers dealing with drilling and production practices under current conditions.

J. F. VAN NORT has been appointed general sales manager of Duff-Norton Manufacturing Company, with headquarters in general offices at Pittsburgh. He formerly was western division sales manager at Chicago.

C. F. SCHRAM, North Texas operator, has organized Camball Oil Company, with capital stock of $25,000. Other organizers include H. D. Jones and J. L. Randel, all of Wichita Falls.

DR. FREDERICK W. SULLIVAN, JR., has been appointed technical director of the Institute of Gas Technology, Chicago. He comes to the Institute from the Barrett Division of Allied Chemical and Dye Corporation, where he has been manager of chemical research since 1940. Previous to his service there, he was director of research for Standard Oil Company (Indiana). He had joined this organization as assistant director of research in 1923 and left as director in 1938.

RAUL ZUMELZU, president of Bolivian Y.P.F., was conferring with officials in Washington last week in an effort to secure field and refining equipment for the Bolivian national oil industry. An agreement was recently completed between the United States and Bolivia whereby Bolivia will receive financial aid for expansion of its oil operations.

C. L. CLARK, of Westinghouse Electric & Manufacturing Company for the past 13 years—recently as control specialist at the Cincinnati office, has been attached to the Cleveland office of Wheelco Instruments Company as sales engineer. Robert N. Miller, for the past seven years sales and service engineer for Mercoid Corporation in Chicago, is now service engineer with the Wheelco Cleveland office. Howard B. Jones, formerly with McGraw-Hill Publishing Company, has been employed as sales and service engineer at the Chicago headquarters office of Wheelco Instruments Company.

H. J. McMANN, Continental Supply Company, Tulsa, has been promoted to district credit manager (Oklahoma-Kansas), succeeding C. L. Vickers, now general credit manager of the company with offices in Dallas.

HOMER C. MOORE, formerly active in the Illinois area as a geologist and prior to that as director of geophysical operations in the Mid-Continent for The Texas Company, has been named head of the geophysical and geological departments of Mid-Continent Petroleum Corporation, Tulsa.

HARRY GRANT, Sinclair Prairie Oil Company, has transferred from Nowata to Pawhuska, Oklahoma.

HENRY SCHWEER, geologist and producer in Oklahoma, has been commissioned a captain in the technical division of the air corps.

LOUIS DESJARDINS, geologist, has opened consulting office in the Kennedy Building, Tulsa.

WILLIAM WOODSON of The Texas Company of Venezuela, and Leo Oliver of Barco in Colombia were guests of the Houston Nomads at a special luncheon September 3. Each guest gave a short talk on conditions in their countries.

J. DAVID LOVE, research geologist for Shell Oil Company, Inc., has resigned to accept an appointment as assistant geologist, United States Geological Survey. At present he has been assigned to duties in the Rocky Mountain area, and is headquartering at Afton, Wyoming.

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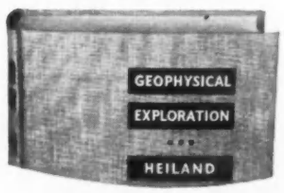

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Squeaks from the Bull Wheel

Absent-Minded

"This afternoon we will take Mr. Frog apart and see what makes him croak," said the professor to his zoology class. "I have a frog in my pocket to be used as a specimen." He reached into his pocket and drew out a paper bag which he emptied on the table. Out rolled a badly squashed ham sandwich.

The professor mopped his brow. "My goodness," he stammered. "I distinctly remember eating my lunch."

Game Called

How did you like the bridge party last night?

It was fine until the cops looked under the bridge.

Spoiled Brat Story

At breakfast one morning the child pushed her cereal away, pettishly announcing that she did not want it and would not eat any of the breakfast.

"Well, dear, what would you like?"

"I want a worm."

Daddy, who would not deprive her of her slightest wish, hurried to the garden and returned with a nice fat one which he laid on spoiled daughter's plate. "There you are, my dear."

"But I want it cooked."

It was sent to the kitchen, rolled in batter, cooked and brought back.

"I want Daddy to have half."

Daddy divided the worm, pulled himself together, and managed to get his portion down.

This time sobs and howls: "But that was the part I wanted."

Not Through the Nose

"Young man, how do you sell your limburger cheese?"

"Madam, I sometimes wonder about that, myself."

Self-Esteem

The captain of the ship called to a loafer on the dock and asked him if he wanted to work.

"Not for you, you blankety-blank scoundrel!" he said.

"Who is that guy?" someone asked.

"Darned if I know," said the captain. "But he seems to know me."

Too Literal

One of the older inhabitants of the little Scottish village was describing a visit he had just made to the newly installed schoolmaster.

"After a bit of talk," the old boy said, "he asked me if I would take anything, and I said I wadna object, and so he fetched the bottle and commenced to pour into a glass. Of course, I soon said, 'Oh, stop, stop, stop!' and—he *did* stop! Na. I dinna think he'll suit this parish."

Routine

The installment man is here again, ma'am.

Tell him to take a chair.

Asserting Himself

After searching the train from end to end, the Pullman porter finally discovered the meek-looking little man huddled behind a magazine in the club car.

"Are you the gen'man from Car B, lower 3, Suh?"

"Yes, I am. What is it, George?"

"Well, Suh, you wife done been waiting up fo' you to come t' bed fo' hours and hours!"

"Is that so!" replied the meek one with spirit. "Well this is the only chance I ever get to stay out all night, and I'm taking it, see!"

Correction, Please

"I know I won the fight last night but, for heaven's sake, don't ever refer to me again in your paper as the local lightweight champion."

"Why not? That's what you are."

"I know it, but it will ruin my business if you call me that. I'm also the local coal dealer."

Fair Enough

"Where have you been?"

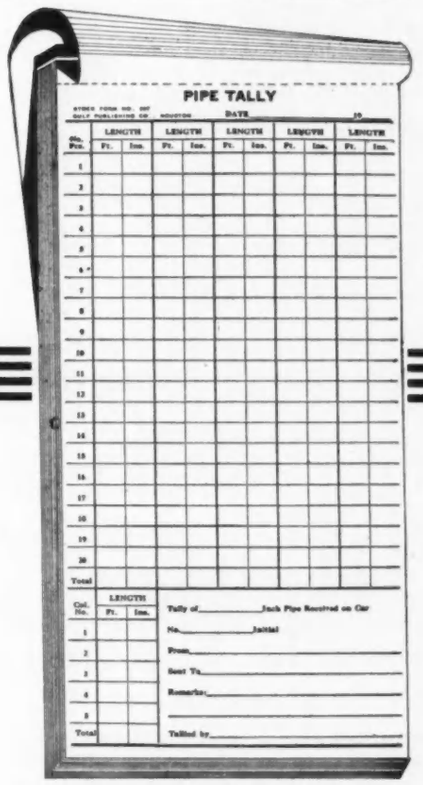
"Getting my hair cut."

"On the company's time?"

"It grew on the company's time, didn't it?"

"Not all of it."

"Well, I didn't have all of it cut, either."



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Notes for the Equipment Buyer and User

Tool Bits

BLACK DRILL COMPANY

Black Drill Company, Cleveland, Ohio, has announced a new line of tool bits for machining hard, tough steels and copper or aluminum alloys.

These tool bits are made of the same metal that has proved its value to industry in the well-known patented "Hardsteel" drills also used in "Hardsteel" reamers. This new metal has many advantages when used in tool bits. It has greater shock-resistance than most cast or cemented tools—minimizing breakage. It shows higher heat-resistance—permitting higher cutting speeds and deeper cuts.

"Hardsteel" tool bits fit admirably into the present war production program wherever lathes, boring mills, shapers and planers with tool lifters work on hard or tough steels, such as the 4100 series, the high chrome, high nickel and high speed tool steels. Satisfaction is also reported when used on abrasive copper, brass, bronze and aluminum alloys, either rolled or cast. They are especially suited to work on heavy forgings where deep rough cuts can be made at faster cutting speeds, but at the same time, give excellent results when used as finishing or forming tools. They cut down scrap loss on many of today's critical metals.

Two other factors make these tool bits inexpensive in use. Since they are solid "Hardsteel" they can be reground on an ordinary wheel time after time. But because they take abuse and operate efficiently at red heat, they need less frequent regrinding. Cases on record show that cuts per grind increased as much as 400 to 500 percent when these tool bits replaced high speed tools.

"Hardsteel" tool bits are made square and round from ⅛-inch up in all the usual sizes.

Compressors

Clark Bros. Co., Inc., Olean, New York, has published a booklet on "Maintenance Hints for Clark 'Angle' Super Two-Cycle Gas - Engine - Driven Compressors."

Briefly, the booklet considers the proper maintenance of the Clark unit and when it should be done, and the troubles which operators sometimes encounter and the methods to solve them. Also there is a section comprised of 23 do's and don't's which every plant engineer and maintenance man should know in order to reduce maintenance and repair costs.

The

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An Economic Survey

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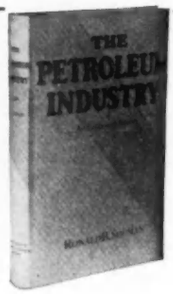

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Allspeed Drive

WORTHINGTON PUMP AND MACHINERY CORPORATION

Worthington Pump and Machinery Corporation, Harrison, New Jersey, has announced a new variable speed multiple V-belt drive. The manufacturer calls it the "Allspeed Drive."

The first of these to be made available is the model A which has a horsepower range of from one-third to three-quarters horsepower with a speed ratio of 16 to 1, that is, any speed from ⅛ to twice the driving motor speed. This drive is said to be exceptionally compact, ball-bearing equipped, and so designed that it can be operated in any plane. Further, it can be directly coupled to any standard motor and the output shaft can be run at motor speed, and is flexible enough to be applied to any type of machine within its power range.

An interesting feature of this drive is its mechanical, positive belt-tensioning device which automatically compensates for increased arc of belt contact which results from changing from low to high speeds. In this tensioning device no springs are required. A further feature is the fact that the drive need not be dismantled to change belts. According to the manufacturer other sizes are now being developed for 1 to 3, 3 to 5, 5 to 7¼, and 7½ to 10 horsepower.

While these drive units were originally intended for application to machine tools, they are already being successfully used on numerous other types of equipment.

Electrode

THE LINCOLN ELECTRIC COMPANY

The Lincoln Electric Company, Cleveland, Ohio, has announced a new arc-welding electrode, designated as "Fleetweld 11," and created expressly for use with the "Fleet-Fillet" technique of arc welding, recently announced by the company. The electrode is designed to obtain maximum benefit in speed of welding from the new technique.

"Fleetweld 11" is not only a fast flowing electrode, but it gives deeper penetration of metal into the root of the joint. It is of shielded arc type and heavily coated to exclude oxides and nitrides from the weld.

In demonstration, the new electrode welded in 35 seconds a joint that required 1 minute and 17 seconds to weld with conventional electrodes and ordinary procedure.

The new electrode and the "Fleet-Fillet" technique permits up to 100 percent faster fillet welding.

Not only does the new technique permit faster welding, it permits the operator to do more work without fatigue. It decreases welding costs as well as the amount of electrode used per foot of weld.

High currents are used, the electrode is advanced at a higher speed and the weld metal penetrates into the corners where the two pieces of metal are

Suggestions for moving oil tanks

Information supplied by "The Oil Weekly"

Although the average oilfield tank is a sturdy container when set up, it is a rather fragile thing when taken down for movement from location to location. More than ordinary care should be used in transportation which is where most damage to tanks occurs. Some manufacturers and oil companies recommend that in transportation the staves be set on end, rather than be laid down, as setting them on end will help to preserve the necessary curve. If carried on trucks, wooden blocks should be used to protect the staves from binder chains.

If tanks are to be skidded, care should be used to prevent the jacks used in tilting the tanks on to the skids from sinking into the ground. This is a simple precaution which pays dividends in moving the tank.

If the tanks are to be set on the ground, a soil analysis may add years to the life of the tank in helping to avoid unnecessary tank bottom corrosion.

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A symposium conducted by the Research Committee of The American Association of Petroleum Geologists, A. I. Levorsen, chairman. Papers read at the Twenty-sixth Annual Meeting of the Association, at Houston, Texas, April 1, 1941, and reprinted from the Association Bulletin, August, 1941.

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Edited by A. I. LEVORSEN

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The purpose of this symposium is to get an over-all picture of the undiscovered oil resources of North America, north of the Rio Grande. Ten geological organizations have participated, to the end that this survey has behind it the authority of many geologists representing state and national geological surveys, large and small oil companies, and consulting and independent geologists. A map and a section of geology, stratigraphy, and structure illustrate each province description

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Two Army-Navy "E" Award Flags presented Byron Jackson Company

joined. The electrode is held at an angle of 45 to 60 degrees with the horizontal plate and 90 degrees with the electrode path along the joint. The arc produced is so short, the electrode coating practically touches the metal.

Shot-Hole Casing

Federal Electric Company, 700 Waugh Drive, Houston, and 8700 South State Street, Chicago, has issued a bulletin on the new plastic shot-hole casing. This type of plastic casing for seismograph work is said to have been created to fill a definitely existant need and was designed expressly for the job it had to do.

Byron Jackson Presented Army-Navy Award Flags

First presentation of two Army-Navy production award flags was accorded Byron Jackson Company recently. The reason for the presentation of the two flags was due to the company's having two plants, each of which is producing war materials for the Army and Navy.

Master of ceremonies at the dual presentation was Carleton B. Tibbetts, president of the Los Angeles Chamber of Commerce, while actual presentation was made by Lieutenant Colonel Arthur R. Baird. The acceptance was made by E. S. Dulin, president of the company.

Army-Navy "E" pins also were presented to representatives of both plants.

I. H. Grancell Moves Into New Factory

I. H. Grancell, manufacturer of joint-sealing compounds, moved into a new factory at 1601 East Nadeau Street, Los Angeles, September 1. Floor space of the new plant is four times greater which, with additional manufacturing equipment and increased personnel, considerably increases the company's capacity.

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turing various lead products. Associated with him have been two sons, Alvin, now in the Army, and Sherman, general manager of the company.

The main products of the company are 'Bestolife Lead Seal Joint Sealing Compounds used in the oil and refining industries to prevent galling of tool joints, drill collars and subs, lengthen life of threads, increase packing life and prevent scoring; to assure tightest joints, yet quick and easy separation of parts; to prevent galling of pipe threads, etc., the company says. Another product, 'Bestolife Lead Seal "Oxygen Grade" Compound, is for use on oxygen tank fittings and instruments.

Expansion of the producing capacity of the company was made necessary due to large contracts. A modern laboratory is being constructed at the new plant, and the Grancell organization proposes to offer the facilities of this laboratory and its personnel to the oil and refining industries for joint sealing and lubrication problems, an announcement said.

Codes on Natural Gas and Natural Gasoline Revised

The American Petroleum Institute, Division of Production, has issued revised editions of codes for measuring, sampling, and testing natural gas and for measuring, sampling, and testing natural gasoline.

These revised editions embody changes adopted at San Francisco, November, 1941, and which subsequently were ratified by letter ballot, including advancement of both codes from "tentative" to "final" status.

The second edition of Code 50-A includes new paragraphs covering measurement of gas at pressures above 1000 pounds per square inch, including orifice coefficients as prepared by D. A. Sillers of Lone Star Gas Company, Dallas, Texas, chairman of subcommittee on gas measurement. In addition, this edition includes a method for determination of water vapor, and a clarification of the explanations regarding pressure base of 14.73 per square inch.

The second edition of Code 50-B includes two new sections on storage and measurement in spheroidal and spherical pressure tanks, prepared by the subcommittee to which this subject was assigned under chairmanship of Paul L. DeVerter, Humble Oil & Refining Company, Baytown, Texas.

Copies of the codes are available from the Dallas office of the Institute at 50 cents each.

Valves

R-S Products Corporation, Wayne Junction, Philadelphia, Pennsylvania, has issued a four-page bulletin No. 15-B which features heavy-duty butterfly valves which have a sufficient face-to-face dimension to permit the mounting of ball bearings for high pressure service.

The chief advantages, applications and general operating characteristics are discussed. Included are complete tables of dimensions with raised-face or ring-joint flanges.

W. HARRY ALLEN, application engineer for Fafnir Bearing Company, Tulsa, has been transferred to Detroit as assistant district manager of the eastern area.

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